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COMMITTEE OF EXPERTS ON THE
TRANSPORT OF DANGEROUS GOODS

REPORT OF THE COMMITTEE OF EXPERTS ON ITS TWENTIETH SESSION (7-16 December 1998)

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REPORT

ORGANIZATION OF THE SESSION

1. The Committee of Experts on the Transport of Dangerous Goods held its twentieth session from 7 to 16 December 1998 with Mr. S. Benassai (Italy) as Chairman and Mr. F. Wybenga (United States of America) as Vice-Chairman.

2. The Director of the Transport Division of the Economic Commission for Europe, Mr. J. Capel Ferrer, welcomed participants.

Attendance

3. The session was attended by experts from the following countries: Australia; Belgium; Brazil; Canada; China; France; Germany; Italy; Japan; Mexico; Morocco; Netherlands; Norway; Poland, Russian Federation; South Africa; Spain; Sweden; United Kingdom; United States of America.

4. Observers from the following countries were also present under rule 72 of the rules of procedure of the Economic and Social Council: Austria; Czech Republic; Finland; Portugal; Republic of Korea; Switzerland; Tunisia.

5. Representatives of the United Nations Environment Programme (UNEP) and of the following specialized agencies were also present: International Labour Office (ILO); International Civil Aviation Organization (ICAO); International Maritime Organization (IMO). Representatives of the International Atomic Energy Agency (IAEA) also attended.

6. The following intergovernmental organizations were also represented: Commission of the European Communities (CEC); Intergovernmental Organization for International Carriage by Rail (OTIF); Organization for Economic Co-operation and Development (OECD) and Organization for the Prohibition of Chemical Weapons (OPCW).

7. Representatives of the following non-governmental organizations took part in the discussion of items of concern to their organizations: European Chemical Industry Council (CEFIC); European Committee of Paint, Printing Ink Artists Colours Manufacturer's Associations (CEPE); International Technical Committee for the Prevention and Extinction of Fire (CTIF); European Industrial Gas Association (EIGA); Federation of European Aerosol Associations (FEA); International Federation of Freight Forwarders Association (FIATA); Hazardous Materials Advisory Council (HMAC); International Air Transport Association (IATA) International Council of Intermediate Bulk Container Associations (ICIBCA); International Confederation of Plastics Packaging Manufacturers (ICPP); International Electrotechnical Commission (IEC); International Road Transport Union (IRU); International Organization for Standardization (ISO); International Tank Container Organization/Tank Container Association (ITCO/TCA); International Union of Railways (UIC).

Distribution of documentation

8. Several delegations complained that of the approximately 60 documents on the agenda, all transmitted to the secretariat within the deadline of the 10 weeks preceding the session, they had officially received only some 10. The problem of distribution emerged as being general, since some delegations had not officially received any documents. The Committee pointed out that the documentation must be available sufficiently in advance to be brought to the attention of the competent experts and to enable delegations to take decisions during the session.

9. Several experts noted that, although the documentation had not been distributed officially, it had nevertheless been possible to consult it well in advance, including the informal documents, on the Transport Division's Internet site. In view of the importance of the decisions to be taken at the current session with regard to the drafting of the Model Regulations and their implementation by the organizations in charge of the modal aspects of the international transport of dangerous goods and by Governments at the national level, the Committee considered that decisions could be taken on the basis of the documentation obtained on Internet.

10. The expert from Germany said that he had been unable to download six documents. He considered that the fact that the Transport Division had made the documents available on Internet should not be an excuse for the Conference Services Division to evade its obligations.

11. The Committee requested the Director of the Transport Division to draw the attention of the Conference Services Division to the problem and asked him to find a solution. The Chairman asked the experts to reflect on the matter during the session and to consider whether the problem should be brought to the attention of the Council, given that it had already been brought up at the three previous sessions of the Sub-Committee and that the situation was still continuing to deteriorate (see paras. 155-157).

ADOPTION OF THE AGENDA

12. The Committee adopted the provisional agenda prepared by the secretariat (ST/SG/AC.10/24 and Add.1) after amending it to include late submissions (informal documents INF.1 and INF.2).

WORK OF THE SUB-COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS

Reports of the Sub-Committee on its thirteenth, fourteenth and fifteenth sessions:
ST/SG/AC.10/C.3/26 and -/Add.1-3
ST/SG/AC.10/C.3/28 and -/Add.1-3
ST/SG/AC.10/C.3/30 and -/Add.1-3

Multimodal portable tank transport

Reference documents:	
ST/SG/AC.10/C.3/1998/88/Add.1	(United States of America)
ST/SG/AC.10/C.3/28, annex 1	(Report of the Sub-Committee on its fourteenth session)
ST/SG/AC.10/C.3/1998/26/Add.1	(Report of the Sub-Committee on its thirteenth session)
ST/SG/AC.10/C.3/1998/32	(United States of America)
ST/SG/AC.10/C.3/30, annex 3	(Report of the Sub-Committee on its fifteenth session)
New documents:	
ST/SG/AC.10/1998/53	(United States of America)
ST/SG/AC.10/1998/57	(Secretariat)
Informal documents:	
INF.6	(IMO)
INF.25	(United Kingdom)
INF.31	(United States of America/secretariat)

13. The Committee adopted the proposal contained in document ST/SG/AC.10/1998/53, subject to the following points:

(a) The question of toxic by inhalation substances required to be considered over the next two-year period;

(b) The amendments proposed in document INF.25 were adopted;

(c) Some corrections were required for UN Nos. 3257, 3230 and 3240.

14. A working group was established to prepare the list of necessary amendments and the adopted texts are reproduced in annex 1 (for amendments to Chapter 4.2), annex 2 (for guidelines for assigning portable tank requirements to substances of Classes 3 to 9) and annex 3 (for the assignment of T codes to specific substances).

15. The Committee noted that some contradictions were likely in the list of dangerous goods due to the fact that some of the substances listed should be classified as solids but that the provisions for carriage in tanks applied to substances carried as liquids, either in the molten state or as solutions. This situation occurred in Classes 6.1 and 8 in particular, or in some UN numbers which might also include liquid or solid isomers or hydrated forms of solids.

16. The Committee agreed that the question of transport of solids in tanks should be considered during the following biennium. Certain of the cases mentioned in document INF.31 might be resolved at the current session, but others would have to be considered separately (hydrates in solid form, isomers, substances in a molten state). It was pointed out that a question of classification was involved for solutions, as substances transported in a physical state different from that of the substances designated by a UN number should normally be carried under an n.o.s. entry. In practice, however, the IMDG code and United Nations Model Regulations contained provisions for the transport in tanks of solids in solution under the same UN number as the entry assigned to the solid.

17. The expert from Belgium mentioned that the IMDG Code, according to the next amendment scheduled for 1 January 2001, would take up the Model Regulations requirements relating to the construction of tanks, but IMO type tanks could continue to be built up to 2003. The use of tanks constructed according to the Model Regulations would be allowed on the basis of the rationalized approach. IMO type tanks could be used until 2010 in conformity with existing requirements for use. After that time, they could still be used but in conformity with the provisions applicable to tanks built according to the Model Regulations. The dates should be confirmed by the IMO Sub-Committee on Dangerous Goods, Solid Cargoes and Containers (DSC) in February 1999.

18. The Committee agreed that, in future, dates should be set for the entry into force of the new requirements and that transitional measures should be provided for, if necessary, in the Model Regulations.

Document: ST/SG/AC.10/1998/15 (Secretariat)

19. The Committee adopted the draft amendments to Chapters 4.2 and 6.6 (new Chapter 6.7) prepared by the Sub-Committee. The document's conformity with the text of document ST/SG/AC.10/1998/53 should be verified.

Packing instructions

Reference documents:

ST/SG/AC.10/C.3/1998/19	(United States of America, United Kingdom)
ST/SG/AC.10/C.3/1998/21	(United States of America, United Kingdom)
ST/SG/AC.10/C.3/1998/22	(United States of America, United Kingdom)
ST/SG/AC.10/C.3/1998/49	(Germany)
ST/SG/AC.10/C.3/1998/50	(Germany)

General discussion

Documents:	ST/SG/AC.10/C.3/1998/16	(Germany, United Kingdom) (Report of the informal Working Group on Packing Instructions, Frankfurt, 7-11 September 1998)
	ST/SG/AC.10/C.3/1998/41	(Belgium)
	ST/SG/AC.10/1998/57	(Secretariat)

Informal documents:	INF.3	(Belgium)
	INF.24	(CEFIC)
	INF.34	(Germany)

20. The expert from Belgium said that, according to paragraph 5 of the Recommendations, provisions less strict than those contained in the Model Regulations might be applied to a particular mode of transport, but that it should not be possible to draw up more stringent provisions except for air transport. In his view that paragraph should remain unchanged and the packing instructions should reflect the most stringent provisions applicable to a particular mode of transport.

21. It was pointed out that the provisions currently applicable to a particular mode of transport could vary from country to country, in particular for domestic transport, and that it would be difficult to choose a regulation for reference. The objective of the work in question, as defined by the Committee, was to develop packing instructions that would be acceptable for both sea and land transport and it was for the Committee, whose experts represented all modes of transport, to find a compromise solution in close cooperation with the modal organizations concerned.

22. The Committee agreed not to amend paragraph 5 and to take up consideration of the report of the informal Working Group on Packing Instructions which had met at Frankfurt from 7 to 11 September 1998 at the invitation of the Government of Germany. The items which had not been resolved by the Working Group would be discussed on a case-by-case basis.

Packagings

Documents:	ST/SG/AC.10/1998/16/Add.1	(United Kingdom)
	ST/SG/AC.10/1998/16/Add.2	(United States of America)
	ST/SG/AC.10/1998/18	(Germany)
	ST/SG/AC.10/1998/21	(Germany)

Informal documents:	INF.5	(IMO)
	INF.13	(United Kingdom)
	INF.24	(CEFIC)
	INF.26	(United Kingdom)
	INF.31	(United States of America/Secretariat)
	INF.51	(Norway, Sweden)

Use of removable head drums for viscous PG I liquids (ST/SG/AC.10/1998/21)

23. The expert from Germany had made a proposal to the effect that, in the case of viscous liquids of packing group I, such drums could be used only when the viscosity of the liquids was higher than 2,680 mm^2/s, rather than 200 mm^2/s as the Sub-Committee had specified (ST/SG/AC.10/C.3/30, para. 52). He expressed the view that such drums had not sufficiently shown to withstand all normal conditions of transport, e.g. vibration.

24. In the opinion of the expert from France, in fixing a viscosity requirement the Sub-Committee had recognized the need to provide restrictions on the use of such drums for liquids in packing group I. The task at hand was to determine the viscosity level at which removable heads could be permitted for practical reasons, i.e. filling the drums. The observer from Switzerland suggested to avoid the use of drums with too large openings by defining a relation between the diameter of the drum and that of the opening.

25. Other delegations were of the opposite view, and felt that there was no reason to prohibit the use of removable heads for liquids in packing group I, as their use was already permitted for liquids in groups II and III and did not raise any particular safety problems. Although their use was not permitted in Europe for packing group I, it was permitted in other regions of the world, such as North America and Australia. The expert from the United States said that all incidents or accidents involving dangerous goods in his country were entered in a database, and that those statistics indicated that there was no reason to doubt the effectiveness and safety of such packagings.

26. The Committee confirmed the Sub-Committee's decision to set a viscosity limit of 200 mm^2/s.

27. The expert from Germany requested that the use of removable head drums for PG I should be limited to substances of Classes 3, 6.1 and 8 with no subsidiary risks or which did not require stabilization measures.

28. The proposal was put to a vote but was not adopted.

Solids which may liquefy during transport (ST/SG/AC.10/1998/18, Germany)

29. Several experts supported in principle the proposal that P002 should be applied to solids liable to liquefy during transport, which would imply not only that packagings intended for P002 should be used instead of those intended for P001, but that they should also be tested for the transport of liquids. Nevertheless, reservations were expressed about the second part of the German proposal (conditions of viscosity, interpretation of the term "hermetically sealed liner", relationship to salvage packagings, list of substances concerned).

30. It was also pointed out that paragraph 4.1.3.5 as proposed by the Working Group (see ST/SG/AC.10/1998/16/Add.3) dealt with the same question and contained a list of packagings that should not be used if the substance concerned was liable to liquefy during transport (without however stipulating that the packagings must be tested for the carriage of liquids).

31. The expert from Germany requested that the Committee should take a decision on the principle contained in the first sentence of paragraph 4.1.3 as proposed in his document. The Committee took a decision not to accept that principle.

Details concerning packing instructions

32. A working group was asked to study informal documents INF.5, INF.13, INF.26, INF.31 and INF.51; the amendments adopted are reflected in the final text of Chapter 4.1 reproduced in annex 4.

33. The Committee adopted the proposals contained in informal document INF.31 with the following reservations:

separation of entries which might take either a liquid or solid form, as proposed in paragraph 2 (a), should apply only to the entries mentioned in document ST/SG/AC.10/1998/16/Add.2;

packing instructions should all display a requirement referring to the general packing instructions and to the provisions specific to the class or division, if necessary, as in existing instructions for explosive substances and articles.

34. Regarding the proposals by the expert from Germany (INF.34) and CEFIC (INF.24) concerning packing instructions P601, P602 and P804, the Committee decided by vote that the instructions proposed by the Working Group represented a compromise which was preferable to a reference to the competent authority or to the alternative proposed by Germany.

35. The Committee considered the packing instructions proposed in document ST/SG/AC.10/1998/Add.1 on an individual basis. The packing instructions adopted are reproduced in annex 4.

36. The Committee confirmed the decision of the Sub-Committee to deviate from certain limits agreed by the IMO Sub-Committee on Dangerous Goods, Solid Cargoes and Containers (DSC) at its third session for P001 and P002, for example for certain packing group I limits (see also ST/SG/AC.10/C.3/30, para. 35).

37. The Committee decided that it would not be necessary to reproduce a list of the special packing provisions in the Model Regulations. The special packing provisions would be cross-referenced in the table in Chapter 3.2, column (9), and would appear directly under the packing instructions with their reference number as they appeared in document ST/SG/AC.10/1998/16/Add.1. The same principle would apply to the instructions relating to Class 1 and to IBCs.

38. The Committee agreed that instruction P200 would be introduced on a temporary basis, as the instructions for gas cylinders were to be prepared during the following biennium.

39. Concerning instruction P501, the Committee felt that the general provision in paragraph 4.1.1.2 (for compatibility of the packing material with the substance carried) was sufficient and that it was not necessary either to underline or refer to that general provision in the instruction itself, as it would then be necessary to do so in all the instructions, which would be inconsistent with the approach taken. The Committee decided to indicate in the instruction that the packagings should be equipped with vents, as the instruction applied to only one substance (UN 2015 - Hydrogen peroxide, with more than 60 per cent hydrogen peroxide).

40. In the case of instruction P504, the Committee decided not to require a vent for UN 2014 (Hydrogen peroxide, with between 20 and 60 per cent hydrogen peroxide) because it was not certain that a vent was always needed for low-concentration solutions. Furthermore, indicating such a requirement in a particular case might give the impression that a vent was not necessary in the cases not listed. The Committee therefore felt that the decision to install a vent was for the industry to take in accordance with general provision 4.1.1.8.

41. The expert from Belgium indicated that in 4.1.1.8 there is no obligation for the use of a vent.

42. In the case of instruction P801 the Committee decided that there was no need to require that rigid outer packagings should meet the performance level of packing group III since storage batteries could be carried without packaging on pallets or in other types of packagings which did not meet the requirements of Chapter 6.1. The inclusion of a requirement of a tilting test at an angle of 45° was similarly judged unnecessary.

43. The Committee adopted amendments to instruction P408 and special provision 133 on the basis of a proposal by the expert from France (INF.52) (see annex 4).

44. The Committee adopted the proposed amendments contained in the annex to document ST/SG/AC.10/1998/16/Add.1 (see annex 4).

IBCs

Documents: ST/SG/AC.10/1998/16/Add.2
ST/SG/AC.10/1998/16/Add.5

45. The Committee adopted the proposals of the Working Group concerning IBCs with some amendments (see annex 4).

Informal document: INF.23 (Norway and Sweden)

46. The expert from Norway proposed that a special provision B10 should be added for the carriage of ammonia solution (UN 2672, instruction IBC 03) with a concentration of less than 30 per cent in rigid or composite plastics IBCs, as was currently permitted in Norway and Sweden.

47. At the request of the representatives of ICPP and ICIBCA, which was accepted by the expert from Norway, the Committee decided to deal with the question over the next biennium.

Venting devices

Documents: ST/SG/AC.10/1998/4 (Germany)
ST/SG/AC.10/1998/58 (Germany)

48. The expert from Germany proposed that venting devices should be prescribed for packagings intended for the carriage of certain substances such as solutions of hydrogen peroxide and hypochlorites (ST/SG/AC.10/1998/58) and that special provisions should also be envisaged for IBCs.

49. Several experts considered that the proposed special provision P30 was difficult to understand. Others pointed out that paragraph 4.1.1.8 allowed for venting devices and that the consignor was responsible for deciding whether a packaging should have them. Paragraphs 6.5.3.3.6 and 6.5.3.4.10 required relief devices for occasions on which internal pressure in IBCs might develop dangerously. They did not therefore see the need to add new requirements for individual cases.

50. The Committee decided not to consider the list of relevant substances submitted by Germany.

Introduction to packing instructions

Document: ST/SG/AC.10/1998/16/Add.3 (United Kingdom)

51. The text resulting from the work of the informal working group was adopted with some amendments and in particular the deletion of paragraph 4.1.3.4 (which was not in accordance with the principles of classification of solutions) and the addition of some packagings and IBCs to the list of packagings which should not be used for the carriage of substances liable to become liquid during transport (see annex 4).

52. For paragraph 4.1.3.9 (b) it was specified that all the relevant requirements of Part 6, including those concerning the testing, approval and marking of packagings or IBCs, would apply to alternative packagings.

Compatibility requirements for packagings for the transport of fluoro compounds

Document: ST/SG/AC.10/1998/17 (Germany)

53. The expert from Germany withdrew his proposal as the adopted paragraph 4.1.3.1 responded to the problem.

Definition for combination packagings

Document: ST/SG/AC.10/1998/39 (United States of America)

54. Although this document had been designed to take account of the case of articles carried in outer packagings so that the package could be regarded as a combination packaging, several experts considered that the repercussions of this proposal required study in detail. The question could be considered in the course of the forthcoming biennium.

Large packagings

Document: ST/SG/AC.10/1998/16/Add.4 (Germany)

Informal documents: INF.9 (United Kingdom)
INF.41 (Germany)

55. Several experts considered that the proposals had come too late and that the proposed packing instructions should be the subject of a detailed review in the course of the next biennium. Some experts did not see the need to include instructions in such detail in the Model Regulations, particularly as the use of large packagings was relatively infrequent.

56. Other experts expressed the hope that these instructions would be included in the next edition of the Model Regulations since their countries' industries wished to use them for international transport. The Committee decided to consider the proposal contained in document INF.9; the texts adopted are reproduced in annex 4.

57. The Committee agreed that the assignment of instructions LP 01 and LP 02 would be according to the list contained in document INF.9. Instruction LP 099 was included for future use but for the time being was not assigned to any entry. Instruction LP 101, as amended, was assigned to the same entries as present instruction 130, and instruction LP 102 to the same entries as present instruction 134.

58. The proposed instruction LP 801 was not adopted, since the carriage of storage batteries in slatter crates was permitted and there was no need to prescribe special conditions for large packagings.

59. The proposed instruction LP 901 was not adopted since the majority of the Committee considered that there was no need for additional restrictions on the carriage of airbags etc. according to special provision 235.

Report of the ad hoc working group on packing instructions

60. The Committee adopted the amendments to ST/SG/AC.10/1998/16/Add.1 and -/Add.3 and other consequential amendments agreed by the ad hoc Working Group on packing instructions with a few modifications (see annex 4).

61. The expert from Germany considered that, in view of the positive decision taken by the Committee with respect to document ST/SG/AC.10/1998/20 for type N packagings, the transport of dangerous goods in type N IBCs should not be allowed in the proposed IBC packing instructions.

62. The Committee considered that the decision taken with respect to document ST/SG/AC.10/1998/20 was related to type N packagings only and the Committee did not endorse the proposal by Germany at the end of that document in which that type N IBCs should not be included either in Chapter 6.5 of the Model Regulations or in the packing instructions.

63. The Committee decided that type N IBCs should be included in Chapter 6.5 and referred to in the IBC packing instructions.

64. After final adoption of the conclusions of the Working Group on packing instructions, the experts from Belgium, Germany and the Netherlands expressed reservations on the outcome of this work and requested that their statements be annexed to the report (see annex 5).

65. The Committee took note of these reservations and it was recalled that decisions in this forum are made in accordance with the ECOSOC Rules of Procedures, and not on a consensus basis.

66. The expert from the United States of America regretted that three experts felt it necessary to express such reservations. He recalled that, as an expert of the United States of America, he expressed a coordinated position of his Government with respect to all modes of transport and he considered that the packing instructions adopted at this session resulted from a good spirit of compromise and would ensure a good level of safety for all modes of transport.

67. The Chairman stated that there was an agreement of the Committee on how to deal with the questions underlined in document ST/SG/AC.10/C.3/1998/41 and that the majority of the Committee felt that the decision in terms of packing instructions, resulting from a lengthy discussion in several meetings of the Sub-Committee and working groups, would not impair the level of safety.

Draft amendments to the Recommendations on the Transport of Dangerous Goods, Model Regulations

Document: ST/SG/AC.10/1998/15 (Secretariat)

68. The Committee considered the draft amendments to the Model Regulations on the Transport of Dangerous Goods prepared by the Sub-Committee during the biennium, as consolidated by the secretariat, and proposals relating to them. The adopted amendments are reproduced in annex 1.

Draft amendments concerning Class 7

Documents: ST/SG/AC.10/C.3/30/Add.3 (Report of the Sub-Committee)
ST/SG/AC.10/1998/22 (Secretariat)

Informal document: INF.39 (IAEA)

69. The Committee considered the secretariat's proposals concerning the provisions relating to radioactive material with subsidiary risks and IAEA's comments on the proposals.

70. The Committee felt that the subsidiary risks in the case of Class 7 should be reflected in the documentation. It also agreed to reintroduce special provision 172 in an amended form.

71. In contrast to the opinion of the IAEA representative, the Committee felt that radioactive material in excepted packages (UN Nos. 2908, 2909, 2910 and 2911) having other dangerous properties should as a matter of priority be classified in the class corresponding to the dangerous properties, as the danger of radioactivity would then become a subsidiary danger. However, the radioactive nature of the substances should be reflected in the name, and the requirements applicable to the IAEA regulations should also be respected. A special provision was assigned to such material for that purpose.

72. For packing provisions, the Committee decided that it should be clearly indicated that the requirements of Part 6 were applicable to packagings, IBCs and tank-containers containing radioactive material with subsidary risks.

73. The amendments to document ST/SG/AC.10/C.3/30/Add.3 can be found in annex 1.

74. The expert from the United Kingdom proposed that section 6.4.1 (reserved) should be deleted and that all the paragraphs in Chapter 6.4 should be renumbered accordingly. One member of the secretariat pointed out that document ST/SG/AC.10/C.3/30/Add.3 had already been translated into the six official United Nations languages and that renumbering the paragraphs of such a large chapter and checking all their cross-references would be a long and costly job not only for the United Nations translation services but for those of the other organizations concerned (ICAO and IMO) which had received document ST/SG/AC.10/C.3/30/Add.3 but would not receive the final text until much later.

75. The Committee decided to keep the existing numbering. It was also advisable for all the modal regulations to keep the same numbering, including the reserved section.

Naturally occurring radioactive substances

Document: ST/SG/AC.10/1998/44 (CEFIC)

76. The representative of CEFIC said that the new IAEA regulations applied to numerous natural sources such as ores or wastes containing radionuclides which had not previously been covered, and that implementation would entail major difficulties.

77. The representative of IAEA said that this was the result of the implementation of new standards of radiation protection which were far more stringent than previous standards but could be applied generally and not only to transport. He considered that any questioning of these standards and the difficulties of implementing them should be brought to the attention of IAEA in accordance with standard procedures and that it was not for the Committee to deal with the matter.

78. The Committee shared the opinion of the representative of IAEA; the problem should be submitted to IAEA by any member State which deemed it necessary.

Lithium batteries

Documents:	ST/SG/AC.10/1998/30	(Canada)
	ST/SG/AC.10/1998/24	(Japan)
Informal documents:	INF.16	(Canada)
	INF.17	(Canada)
	INF.40	(IEC)

79. The Committee, noting that the current requirements for lithium batteries did not specify whether they were metallic lithium or lithium-ion batteries, and aware that a great many lithium-ion batteries were less dangerous than metallic lithium batteries and were widely marketed internationally, amended the current requirements to include the idea of providing exemptions for lithium-ion batteries (see annex 1) on the basis of a proposal made by IEC.

80. The question should, however, be considered overall on the basis of the document transmitted by Canada which would be reviewed and studied in the course of the forthcoming biennium. The Committee agreed in principal that the proposal submitted by Japan would also be considered in the next biennium.

Informal document:	INF.50	(France)

81. The proposal by France to resolve some difficulties concerning the methods of carrying out tests on large lithium cells (paragraph 38.3.4.4.3 proposed in document ST/SG/AC.10/1998/14) was adopted with an amendment establishing a minimum test force of 10 kN (see annex 1).

Paragraph 2.0.1.3

82. The Committee decided that the concept of packing group, in terms of classification, did not apply to articles even if they required to be packed, as appropriate, in packagings meeting a performance level established for substances of a given packing group as indicated in the packing instructions. The indication of the packing group in column (5) should therefore be deleted in the case of articles where design type tested packaging is not required.

Chapter 2.5

Informal document: INF.22 (CEFIC)

83. The proposal by CEFIC concerning a substance in the list in paragraph 2.5.3.2.4 was adopted (see annex 1).

Chapter 3.1

Document: ST/SG/AC.10/1998/40 (United States of America)

84. The proposed amendments to paragraphs 3.1.2.1 and 3.1.3.2 were adopted (see annex 1).

Chapter 3.2

Document: ST/SG/AC.10/1998/74 (Secretariat)

85. The proposal by the secretariat, on behalf of the RID/ADR Joint Meeting, to replace the subsidiary risk column by a column indicating the labelling code to be used, and accordingly to reverse the order of this column and the packing group column, in accordance with the present layout of the table appearing in the regulations of the United States of America (49 CFR) and the Joint Meeting's decisions for RID and ADR, received only limited support and was not adopted; the other proposals contained in the document similarly received no support.

86. A member of the secretariat reminded the Committee that it was intended that the corresponding tables of RID, ADR and the IMDG Code should be brought into line with the table in Chapter 3.2 in the course of the next two years; in view of the considerable work of preparing these tables for each of the organizations concerned, he hoped that the Committee would not go back on its decision at a forthcoming session.

Use of the term "stabilized"

Documents: ST/SG/AC.10/1998/1 (United States of America)
ST/SG/AC.10/1998/10 (United States of America)

87. The proposals concerning the use of the term "stabilized" in English instead of "inhibited" were adopted in principle (see annex 1).

Refrigerating machines

Document: ST/SG/AC.10/1998/2 and -/Corr.1 (United States of America)

88. The Committee decided to add a new entry for refrigerating machines containing flammable, non-toxic liquefied gases (see annex 1).

UN 2531 Methacrylic acid, inhibited

Document: ST/SG/AC.10/1998/11 (CEFIC)

89. The present entry was reclassified from packing group III to packing group II and the limited quantity provisions and tank codes in Chapter 3.2 were amended accordingly (see annex 1).

Copper sulphate

Documents: ST/SG/AC.10/C.3/1998/51 (Germany)
ST/SG/AC.10/1998/46 (Germany)
ST/SG/AC.10/1998/31 (Canada)

Informal documents: INF.28 (United States of America)
INF.36 (Germany)

90. The Committee considered that the data provided by the expert from Germany did not justify the classification of copper sulphate in Class 6.1, either on the basis of current criteria or on that of human experience.

91. The Committee also decided against classifying this substance in Class 9 on the grounds that it constituted a hazard for the environment and also because the introduction of criteria for aquatic environment hazard would be part of the future work programme.

UN 3270

92. The square brackets were removed round special provision 286 in document ST/SG/AC.10/1998/15 (Chapters 3.2 and 3.3).

Oxygen concentration in gas mixtures

Document: ST/SG/AC.10/1998/26 (United States of America)

93. The Committee agreed to make provision for a limit of 23.5 per cent (instead of 21 per cent) for the oxygen concentration in mixtures carried under entry 1002 Compressed air, without requiring a 5.1 subsidiary risk label. The proposed concentration of 25 per cent had seemed too high. This limit was not accepted for rare gases and oxygen mixtures (UN 1980).

94. The expert from Germany felt that this decision was not in line with the classification requirements for oxidizing gases in the Model Regulations and the proposals for globally harmonized criteria. He regretted that this type of limit had been accepted solely because of industrial practices in filling cylinders.

Hydrazinium nitroformate

Documents: ST/SG/AC.10/C.3/1998/68 (Netherlands)
ST/SG/AC.10/1998/38 (Netherlands)

95. Some experts considered that it would be premature to include an entry in Division 1.1.D since a very specific phlegmatizer had to be used and it was not clearly understood why the classical phlegmatizers were not effective. For the time being the substance can be transported under an N.O.S. entry. The expert from the Netherlands withdrew his proposal.

Chapter 4.1

Testing and shipping of intermediate bulk containers (IBCs)

Document: ST/SG/AC.10/1998/5 (India)

96. Since the expert from India was not present, consideration of the document was postponed until the next biennium.

Type F organic peroxides in IBCs and tanks

Documents: ST/SG/AC.10/C.3/1998/56 (Finland)
ST/SG/AC.10/1998/56 (Finland)

97. The observer from Finland proposed that peroxyacetic acid, stabilized, with a concentration equal to or less than 38 per cent, classified as type F according to the Model Regulations, could be carried in tanks (instruction T34) and in IBCs. At the present time, only concentrations equal to or less than 17 per cent were permitted in IBCs.

98. The representative of CEFIC confirmed that this product was carried in tanks and IBCs under special licence and that it would therefore be desirable to introduce provisions to permit its carriage. Several experts considered, however, that thought should be given to the conditions of carriage, particularly in view of the corrosive nature of the product. These documents would be discussed further over the coming biennium.

Paragraph 4.1.1.1

Informal document: INF.8 (United Kingdom)

99. The proposed amendment to paragraph 4.1.1.1 was adopted (see annex 4).

Chapter 5.2 - Subsidiary risk labels

Documents: ST/SG/AC.10/1998/34 (Australia and Canada)
ST/SG/AC.10/1998/49 (CTIF)
ST/SG/AC.10/1998/57 (Secretariat)

Informal document: INF.38 (Germany)

100. The Committee adopted proposals contained in the document submitted by Australia and Canada, to remove the distinction between primary and subsidiary risk labels (see annex 1).

101. The representatives of ICAO and IATA said that this proposal had not been studied by the ICAO experts and was likely to have major implications for current stowage practices in the loading compartments of cargo planes. These compartments were labelled only according to the principal risk marked on the packages and cargo-handlers would not be in a position to make the distinction. The compartments should therefore carry all the required labels, which would make conditions of stowage much more stringent.

102. The Committee agreed that the French term "risk" was not always used advisedly in the Model Regulations, and that it would sometimes be preferable to use the term "hazard" or "danger". However, this question could not be considered in depth until the next biennium.

Chapter 6.1

Specifications for 1N1 and 1N2 drums

Document: ST/SG/AC.10/1998/20 (Germany)

103. The proposal by Germany was adopted (see annex 1).

Chapter 7.1

Mixed transport of goods of Class 1 with other dangerous goods

Document: ST/SG/AC.10/1998/9 (Norway)

104. Several experts supported the proposal by Norway, but in view of the number of detailed comments, the expert from Norway withdrew it.

Segregation requirements of explosive articles of compatibility groups C, D, E and G

Document: ST/SG/AC.10/1998/25 (United States of America)

105. The expert from the United States of America said that his proposal was intended to bring segregation requirements into line with those of the IMDG Code, RID and ADR. On the proposal of the expert from the United Kingdom, he amended it so that combinations of articles of compatibility groups C, D, E and G would be treated as belonging to group G rather than group E. The proposal was not, however, adopted.

Draft amendments to the Manual of Tests and Criteria

Document : ST/SG/AC.10/1998/14 (Secretariat)

106. The Committee approved the draft amendments adopted by the Sub-Committee with a few changes (see annex 1).

New proposals

107. All new proposals listed under agenda sub-item 2 (d) were deferred to the next biennium for consideration by the Sub-Committee.

ACTIVITIES RELATED TO THE IMPLEMENTATION OF AGENDA 21

Global harmonization of systems of classification and labelling of chemicals

General

Documents: ST/SG/AC.10/1998/51 (Secretariat)
ST/SG/AC.10/1998/52 (United States of America)
ST/SG/AC.10/1998/43 (Austria)
ST/SG/AC.10/1998/41 (Argentina)

Informal document : INF.43 (United Kingdom)

108. It was recalled that the Sub-Committee had already discussed a proposal developed by the Inter-Organization Programme for the Sound Management of Chemicals (IOMC) Coordinating Group for the Harmonization of Chemical Classification Systems (CG/HCCS) aiming at reconfiguring the Committee into a Committee on the Transport of Dangerous Goods and the Globally Harmonized System (ST/SG/AC.10/1998/51) in the context of the follow-up to Agenda 21, chapter 19, Programme Area B and the implementation of the globally harmonized system of classification and labelling of chemicals (see also ST/SG/AC.10/C.3/30, paras. 182-200).

109. The expert from the United Kingdom explained that document ST/SG/AC.10/1998/52 contained other possible options for the reconfiguration, developed by the Government of the United States of America after the session of the IOMC Coordinating Group, but these options had not been formally discussed or agreed by the coordinating group.

110. The experts from Canada and the United States of America did not agree that there needed to be wide participation in the new Committee. They noted that the current Committee of Experts had operated successfully for many years with oversight provided directly by ECOSOC. They anticipated that under the new structure, the work of the current UN Committee of Experts would be undertaken by the new Transport Sub-Committee. They considered that, in view of the UN Committee of Experts' recommendations that the new Committee should not in any way disrupt the successful operation of the Transport Sub-Committee, there would be little substantive work for the new Committee. They were concerned that if the new Committee had wide participation it would draw valuable resources from the two Sub-Committees and that it would also be difficult to maintain a balance between the interests of transport and global harmonization. Therefore, they recommended that participation in the new Committee should be limited to two representatives from each Sub-Committee. In this manner, decision-making would be on the basis of consensus and only one day in every two year period would be necessary.

111. Several experts considered that such an option would not be appropriate because if, on the one hand, this Committee was to take important decisions it should be open to at least all members of each Sub-Committee, and if, on the other hand, it had no real decision role, there would be no reason to reconfigure the existing Committee as it would then be enough to create a new committee on GHS and to find some kind of coordination mechanism. It was recalled, however, that the reconfiguration was intended to strengthen cooperation and to ensure global harmonization.

112. Most experts were in favour of the option proposed by the IOMC Coordinating Group in document ST/SG/AC.10/1998/51.

113. It was noted that this option had been also considered and agreed in principle by the third meeting of the Intersessional Group (ISG 3) of the Intergovernmental Forum on Chemical Safety (IFCS) held in Yokohama, Japan (1-4 December 1998). ISG 3 had requested the IOMC Coordinating Group, in close co-operation with the Committee of Experts on the Transport of Dangerous Goods, to draft terms of reference for the proposal to be submitted to the Council, and to address the issue of resources (see informal document INF.43). ISG 3 recommended also that the issue be introduced to the Council for discussion and decision at its 1999 substantive session.

114. Noting that the IOMC Coordinating Group would meet in January 1999, the Committee decided to prepare a draft resolution on the reconfiguration of the Committee for adoption by the Council at its 1999 session. The IOMC Coordinating Group, when developing the terms of reference, and the Council, when discussing the draft resolution, should be informed that the Committee considers that:

(1) the reconfiguration should not affect the present terms of reference and rules of procedure of the existing Sub-Committee of Experts on the Transport of Dangerous (in accordance with ST/SG/AC.10/1998/51, para. 12);

(2) the role of the reconfigured Committee should be strictly limited to that described in ST/SG/AC.10/1998/51, para. 10;

(3) the rules of procedures of the Economic and Social Council should apply to the proceedings of the reconfigured Committee and the GHS Sub-Committee, in accordance with Rule 27, except that they should endeavour to work on a consensus basis;

(4) the reconfigured Committee and the Sub-Committee of experts on GHS should have as wide a participation and membership as practically possible;

(5) the total number of meeting days allocated to the reconfigured Committee and the two sub-committees should remain the same as that presently allocated to the Committee and its Sub-Committee (38), and the existing schedule of meetings should remain globally unchanged, i.e. sessions of the various bodies should be held back to back every six months; the total number of meeting days allocated to the reconfigured Committee session should not exceed three days per biennium while the number of meeting days that can be allocated to the new GHS Sub-Committee would have to be agreed by the Committee of Experts on the Transport of Dangerous Goods at its twenty-first session, i.e. in December 2000, and should normally be a total of 8 to 10 days for the four sessions (i.e. 2 to 3 days per session);

(6) the reconfigured Committee with its two Sub-Committees should start working in the biennium 2001-2002.

(7) the secretariat should be invited to evaluate additional staff resources needed and budgetary implications.

115. The Committee agreed that the detailed terms of reference to be finalized by the IOMC Coordinating Group could be included in the report of the Secretary-General to the Council on the work of the Committee of Experts on the Transport of Dangerous Goods with comments by the secretariat as to their conformity with the above principles. The secretariat was invited to ensure that these terms of reference be drafted in conformity with UN normal practice.

Health hazards and hazards to the environment

Documents:	ST/SG/AC.10/C.3/26	(para. 122)
	ST/SG/AC.10/C.3/28	(paras. 160-170)
	ST/SG/AC.10/C.3/30	(paras. 201-215)
	ST/SG/AC.10/R.473	(Germany)
	ST/SG/AC.10/C.3/R.635	(United Kingdom)
	ST/SG/AC.10/C.3/R.661	(Argentina)
	ST/SG/AC.10/C.3/R.664	(United Kingdom)
	ST/SG/AC.10/C.3/R.707	(Argentina)
	ST/SG/AC.10/C.3/R.708	(United Kingdom)

Informal documents:

INF.10	(United Kingdom)
INF.10/Corr.1	
INF.20	(OECD)

116. The Committee expressed its deep satisfaction for the success of the work of the OECD in proposed criteria for the Global Harmonization of Systems of Classification of substances presenting hazards to health or hazards to the environment.

117. The Committee welcomed the proposal of the United Kingdom (INF.10) to develop a text for the UN Model Regulations taking account of the proposed criteria for hazard to the environment in the next biennium.

118. The Committee agreed also that the Sub-Committee should consider adapting the existing criteria for toxic substances to those proposed by OECD in the next biennium.

119. The expert from Germany said that the proposed criteria should be implemented through the UN Model Regulations only when a complete package would be available, i.e. criteria concerning pure substances and mixtures as mixtures are those dangerous goods which are most commonly carried. He also stressed that implementation of these criteria through the UN Model Regulations would make sense only if there was a clear commitment, at IFCS III level in 2000, from all Governments to implement the globally harmonized system for all regulatory systems.

120. It was also mentioned that the use of the word "class" for the various toxicity ranges could be misleading in the context of transport regulations, and that OECD should be invited to use alternative names, such as "category".

Physical hazards

Documents: ST/SG/AC.10/C.3/28/Add.3
ST/SG/AC.10/C.3/1997/27 (Chairman of the Working Group)
ST/SG/AC.10/C.3/R.764 (United Kingdom)
ST/SG/AC.10/C.3/1997/37 (United Kingdom)
ST/SG/AC.10/C.3/1997/43 (European Commission)
ST/SG/AC.10/C.3/1997/80 (Norway)
ST/SG/AC.10/C.3/1997/91 (FEA)
ST/SG/AC.10/C.3/1998/62 (United States of America)
ST/SG/AC.10/R.509 (Germany)
ST/SG/AC.10/1998/54 (Germany)

Informal documents: INF.32 (FEA)
INF.27 (Germany)

121. The Committee approved the proposals prepared by the UN/ILO working group on physical hazards as reflected in ST/SG/AC.10/C.3/28/Add.3, and considered in general, with regard to ST/SG/AC.10/1998/54, that, as drafted, these proposals of the Sub-Committee were clear enough for implementation by concerned governmental or intergovernmental bodies.

122. The Committee noted that FEA intended to prepare proposals regarding flammability of aerosols in cooperation with non-European industrial associations concerned with aerosols (INF.32). The Committee agreed that the ILO/UN Working Group should meet again for one day in December 1999 to consider such proposals and finalize the criteria for the flammability of aerosols. The proposal should address all regulatory sectors.

123. The expert from the United States of America said that he envisaged to review the criterion of boiling point used for the classification of flammable liquids.

124. As regards the criteria mentioned by Germany in INF.27 for substances which in contact with water evolve toxic gases, it was noted that OECD had already started work in that field. OECD was invited to consider also the corrosive properties of gases evolved, and the physical process entailing production of gases.

Labelling and hazard communication systems

Document: ST/SG/AC.10/1998/50 (Secretariat)

125. The Committee took note of the draft terms of reference of the ILO Working Group for the Harmonization of Chemical Hazard Communication.

126. Several experts stressed the importance of hazard communication tools for emergency response, and of indicating through such tools not necessarily intrinsic hazards of the dangerous goods, but rather the actual risk presented in case of transport accidents so that emergency services could take appropriate action on the scene.

127. The representative of ILO confirmed that the Committee would be kept informed and would be appropriately consulted for the development of the Globally Harmonized Labelling and Hazard Communications System.

128. The representative of UIC mentioned the proposal in ST/SG/AC.10/1998/35 for future work on the harmonization of emergency response codes on transport placards and he said that it would be useful to establish cooperation between the UN Committee of Experts on the Transport of Dangerous Goods and the ILO Working Group.

Hazardous wastes

Document: ST/SG/AC.10/C.3/1998/64 (UNEP)

129. The representative of UNEP informed the Committee of the programme of work of the Basel Convention Technical Working Group on lists of wastes and applicable procedure for their review and adjustment, in particular with respect to classification criteria for categories H6.2, H 10, H 11, H 12 and H 13.

130. The Committee invited the UNEP Secretariat of the Basel Convention to draw the attention of the Conference of Paris to the Basel Convention on the work on global harmonization of systems of classification and labelling of chemicals carried out in the context of the follow-up to Agenda 21, Chapter 19, and recommended that the globally harmonized systems should be applied as well in the context of the Basel Convention.

131. For H 6.2, the Committee recalled that criteria for clinical wastes are included in Chapter 2.6 of the Model Regulations and that proposals for further work in the new biennium have been made by WHO (see informal document INF.14).

IMPLEMENTATION OF RESOLUTION 1997/3 OF THE ECONOMIC AND SOCIAL COUNCIL

(a) Resolution 1997/3 of the Economic and Social Council

132. The Committee noted that the Economic and Social Council had adopted the draft resolution prepared during the last session (ST/SG/AC.10/23, annex 7), which was issued as Council resolution 1997/3.

(b) Publications of the tenth revised edition of the Recommendations on the Transport of Dangerous Goods (Model Regulations) and the 2nd revised edition of the Manual of Tests and Criteria

133. The Committee noted that the tenth revised edition of the Recommendations had been issued in all United Nations official languages, except the Spanish version the printing of which had been delayed because the Government of Spain had kindly offered to check carefully the translation of the Model Regulations. This version was being printed.

134 The Committee noted with satisfaction that the 2nd revised edition of the Manual of Tests and Criteria was now available in the six official languages.

(c) Activities of international organizations concerned with regulations or recommendations on the transport of dangerous goods at an international level

135. The Committee noted that IMO, ICAO, UN/ECE and OCTI had prepared amendments to their respective instruments (IMDG Code, Technical Instructions for the Safe Transport of Dangerous Goods by Air, ADR and RID) on the basis of the provisions of the 10th revised edition of the Recommendations and that these amendments will enter simultaneously into force on 1 January 1999. Some amendments which were not deemed of an urgent nature, such as the revision of packing instructions for Class 1 had, however, not been implemented through RID and ADR. Work is also now being carried out to align the format of RID, ADR and the IMDG Code to that of the Model Regulations.

Work of ISO on gas cylinders

Informal document : INF.30

136. The Committee took note of a progress report on the work carried out by the Technical Committee ISO/TC58 "gas cylinders", and of the list of new standards published or in preparation in that area. The Chairman of ISO TC58 mentioned that ISO would be prepared to consider revisions of standards concerning toxicity and oxidizing properties of gases in the light of the global harmonization, and that inputs from interested parties would be welcome.

PROGRAMME OF WORK

(a) Periodicity of amendments to the Recommendations on the Transport of Dangerous Goods

Documents: ST/SG/AC.10/R.501 (Germany)
ST/SG/AC.10/R.502 (Argentina)
ST/SG/AC.10/R.523 (Secretariat)
ST/SG/AC.10/R.533 (HMAC)
ST/SG/AC.10/R.534 (United States of America)
ST/SG/AC.10/R.539 (IATA)

137. It was recalled that the Council had invited the Committee to reconsider the question of periodicity of amendments to the Recommendations raised by IMO at the 1996 substantive session of the Council.

138. The Committee considered that no firm decision could yet be taken as regards a possible four-year periodicity of amendments during the period of alignment of the various international instruments dealing with the transport of dangerous goods on the UN Model Regulations on the Transport of Dangerous Goods, and pending decisions regarding the implementation of the globally harmonized system of classification and labelling of chemicals in accordance with Agenda 21 objectives.

139. It was suggested that IMO and ICAO, which have conflicting views on this question, should discuss their respective positions together.

140. The Committee agreed that the work of the next biennium (1999/2000) should lead to a new revised (12th) edition of the Recommendations (Model Regulations), but that this question of future periodicity of amendments should be included in the programme of work of that biennium for consideration with matters related to the evolution of the Model Regulations.

(b) Programme of work for the 1999/2000 biennium and related proposals

Documents: ST/SG/AC.10/C.3/30, paras. 15, 18, 130, 138, 143, 150, 154, 156, 166, 176 and 217
ST/SG/AC.10/1998/3 (Argentina)
ST/SG/AC.10/1998/23 (AEGPL)
ST/SG/AC.10/1998/24 (Japan)
ST/SG/AC.10/1998/32 (Canada)
ST/SG/AC.10/1998/36 (FIATA)
ST/SG/AC.10/1998/37 (Japan/Netherlands)
ST/SG/AC.10/1998/55 (Germany)
ST/SG/AC.10/C.3/1997/89 (United States of America)

Informal documents:	INF.12	(Russian Federation)
	INF.14	(WHO)
	INF.18	(Canada)
	INF.30	(ISO)
	INF.35	(Germany)
	INF.42	(Germany)

141. The Committee agreed that the work programme for the biennium should include the following subjects:

(a) Development of provisions for the transport of gases in gas cylinders and multiple element gas containers;

(b) Review of provisions concerning transport of dangerous goods documentation;

(c) Follow-up to Agenda 21, Chapter 19, Programme Area B (Global harmonization of systems of classification and labelling of chemicals, including development of criteria for the classification of flammable aerosols in cooperation with the International Labour Office, and implementation of already agreed criteria through the Model Regulations on the Transport of Dangerous Goods);

(d) Miscellaneous amendments to the Model Regulations on the Transport of Dangerous goods (Listing and classification, explosives, lithium batteries, limited quantities, packaging issues, portable tank issues, consignment procedures, segregation) and to the Manual of Tests and Criteria;

(e) Development of new provisions for the transport of solid substances in bulk in tanks and freight containers;

(f) Evolution of the Model Regulations on the Transport of Dangerous Goods (rationalized development of the Model Regulations and periodicity of amendments).

142. The following documents were carried forward:

ST/SG/AC.10/C.3/28/Add.3

ST/SG/AC.10/C.3/30/Add.1

ST/SG/AC.10/C.3/R.635, -/R.661, -/R.664, -/R.707, -/R.708, -/R.764

ST/SG/AC.10/C.3/1997/27, -/37, -/43, -/80, -/89, -/91

ST/SG/AC.10/C.3/1998/20, -/54, -/56, -/62

ST/SG/AC.10/R.473, -/R.509

ST/SG/AC.10/1998/5, -/6, -/7, -/12, -/13, -/27, -/33, -/42, -/45, -/47, -/48, -/56

Informal documents: CETDG/20/INF.4, INF.7, INF.10 and Corr.1, INF.15, INF.19, INF.33, INF.37, INF.44, INF.45, INF.46, INF.47, INF.48 and INF.49

Living modified organisms

Documents: ST/SG/AC.10/1998/29 and -/Add.1 (Germany)

143. The Committee requested the secretariat to send a letter to the secretariat of the Convention on Biological Diversity to draw the attention of the open-ended ad hoc Working Group on Biosafety, when preparing the draft Protocol on Biosafety, to the fact that the UN Model Regulations on the Transport of Dangerous Goods and related legal instruments contain appropriate requirements for the transport of certain LMOs. The Committee considered that, if the draft Article 17 was to be maintained, these Model Regulations and relevant international transport regulations should be referred to in that Article. Furthermore, cooperation could be established with the Conference of Parties for further development of such requirements within the UN Model Regulations if deemed appropriate and necessary by the Conference of Parties and the Committee, in the same way as cooperation was established with WHO with regard to pesticides and infectious substances.

Harmonization of emergency codes

Document: ST/SG/AC.10/1998/35 (IRU, CTIF, UIC, CEFIC)

144. Several experts felt that the work item proposed would involve considerable work for several years and were reluctant to overload the Sub-Committee programme; some noted that harmonization of hazard communication tools would also be discussed by ILO.

145. Nevertheless, the Committee agreed that IRU, CTIF, UIC and CEFIC could present, as a first step, an analysis of the existing systems of information codes for the identification of hazards and of emergency measures for the transport of dangerous goods to be discussed in the framework of hazard communication.

Publication of the UN Recommendations on the Transport of Dangerous Goods

Informal document: INF.29 (Secretariat)

146. Several experts considered that the Recommendations on the Transport of Dangerous Goods should continue to be published in a book form, and did not support publication in a loose-leaf format.

147. A member of the secretariat recalled that the Recommendations had to be published in the most cost-effective manner, and that the loose-leaf format, at least for the Spanish, Russian, Chinese and Arabic versions, which are not sold in significant quantities, could be a solution for speeding up the publication of future versions at lower cost.

148. The Committee agreed that this matter should be discussed between the various secretariat services concerned and decided internally.

149. The Committee agreed that, with the growing use of computers, the secretariat should be encouraged to envisage the publication of the Recommendations on CD-ROM possibly as a navigable version. If this could not be done by the secretariat itself, this could be done in partnership with outside contractors under the control of the secretariat for the contents.

(c) Calendar of meetings for the 1999/2000 biennium

150. The dates for the Committee and the Sub-Committee sessions in the biennium are

5-16 July 1999	Sub-Committee of Experts on the Transport of Dangerous Goods (sixteenth session)
6-17 December 1999	Sub-Committee of Experts on the Transport of Dangerous Goods (seventeenth session)
3-14 July 2000	Sub-Committee of Experts on the Transport of Dangerous Goods (eighteenth session)
4-13 December 2000	Committee of Experts on the Transport of Dangerous Goods (twenty-first session)

DRAFT RESOLUTIONS OF THE ECONOMIC AND SOCIAL COUNCIL

151. The Committee prepared two draft resolutions for consideration by the Economic and Social Council on its 1999 substantive session (see annex 6).

ELECTION OF OFFICERS FOR THE 1999/2000 BIENNIUM

152. Mr. S. Benassai (Italy) and Mr. F. Wybenga (United States of America) were elected respectively Chairman and Vice-Chairman of the Committee and the Sub-Committee for the next biennium.

ANY OTHER BUSINESS

Request by EUROPIA for consultative status

Document: ST/SG/AC.10/C.3/1998/14

153. The Committee did not agree to grant consultative status to EUROPIA. Despite the fact that the membership of EUROPIA was opened to all petroleum companies operating in Europe, and included most of the biggest companies of the world, its aims were more specifically related to European concerns.

154. The Committee agreed that the petroleum industry could contribute to its work, and it invited EUROPIA to associate themselves with other associations to form a group more representative of the global interests of that industry at the world-wide level.

Documentation

155. With regard to the problems of distribution of documentation raised at the beginning of the session, it was suggested that, as required by the Sub-Committee, an exception to the general rule of simultaneous distribution should be applied to documents of the Sub-Committee and the Committee because of their technical nature and the amount of documentation submitted.

156. The Committee was informed by the secretariat that it would not be appropriate to seek an exception from the Council as regards the general rules decided by the General Assembly (resolutions 36/117B, 49/221B, 50/206C and 51/211 and 50/11).

157. However, the secretariat was committed to resolving this problem of distribution and assurance had been given by the Conference Services Division that special attention would be paid to ensure timely translation and distribution of the Sub-Committee and Committee documentation when submitted in accordance with the rules.

ADOPTION OF THE REPORT

158. The Committee adopted the report on its twentieth session and its annexes.

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Annex 1

Amendments to the Recommendations on the Transport of Dangerous Goods
(Model Regulations and Manual of Tests and Criteria)
(ST/SG/AC.10/25/Add.1)

Annex 2

Guidelines for assigning portable tank requirements to substances of Classes 3 to 9
(ST/SG/AC.10/25/Add.2)

Annex 3

Consolidated version of the amended Chapter 3.2 of the Model Regulations
on the Transport of Dangerous Goods (Dangerous Goods List)
(ST/SG/AC.10/25/Add.3)

Annex 4

Revised Chapter 4.1 of the Model Regulations
on the Transport of Dangerous Goods
(ST/SG/AC.10/25/Add.4)

Annex 5

Reservations expressed by the experts from Belgium, Germany and the Netherlands on decisions of the Committee concerning packing instructions

(a) Reservation by the expert from Belgium:

"The expert from Belgium reserves its position concerning the approval of the packing instructions. The expert from Belgium is of the opinion that the packing instructions cannot be formally adopted for three reasons:

(i) as there was no formal decision on document ST/SG/AC.10/C.3/1998/41 from Belgium, it is not clear which packing instructions should appear in the Model Regulations;

(ii) the decisions taken by this Committee will, in several cases lead to a decrease in safety for some modes or regulations;

(iii) there is no final proposal presented to the Committee for approval and the Committee had to work as a Sub-Committee or even as a working group (e g discussions on late received papers and on a completely new information document, no time to study a report of the working group).

Notwithstanding its reservation, the expert from Belgium expresses its appreciation for the amount of work already done."

(b) Reservation by the expert from Germany:

"In view of the decisions of the Committee concerning

- the use of removable head drums for packing group I liquids (ST/SG/AC.10/1998/21);
- the packing provisions for solids which may liquefy during transport (ST/SG/AC.10/1998/18);
- the deletion of the special packing provision against UN 1131 in P001 (ST/SG/AC.10/1998/16/Add.1);
- the packing provisions for substances evolving gases during transport as listed in ST/SG/AC.10/1998/58 not requiring mandatory venting devices on packagings (including large packagings and IBCs) (ST/SG/AC.10/1998/16/Add.1);
- the packing provisions for the transport of batteries in P801 (ST/SG/A.10/1998/16/Add.1);
- the inclusion of N-type IBC in the packing instructions for IBCs (ST/SG/AC.10/1998/16/Add.5 and report of the working group);

- the permission of IBCs of types other than wooden, fibreboard, flexible and composite IBCs with flexible inner receptacle for packing group I solids which may liquefy during transport (ST/SG/AC.10/1998/16/Add.5 and report of the working group),

the expert from Germany considers that the level of safety of the new elaborated packing instructions in these areas is insufficient and expresses concern at this situation. Therefore, he expresses a reservation on these decisions."

(c) Reservation by the expert from the Netherlands:

"With respect to the packing instructions, including the IBC and large packagings instructions, the expert from the Netherlands would like to express a general reservation on the decisions taken by the Committee. The expert from the Netherlands feels that the time pressure in developing these instructions was too high and the organizations concerned with specific modes of transport did not have the time to react properly on the proposals.

The experience of such organizations with the packing of dangerous goods has not been taken into account properly. The results of the instructions set up by the Committee will be considered by such organizations, and on that basis the Committee should review the packing instructions in order to develop instructions which can be used in multimodal transport."

Annex 6

DRAFT RESOLUTIONS OF THE ECONOMIC AND SOCIAL COUNCIL

1999/XXX Work of the Committee of Experts on the Transport of Dangerous Goods

The Economic and Social Council,

Recalling its resolutions 1995/6 of 19 July 1995 and 1997/3 of 18 July 1997,

Bearing in mind the increasing volume of dangerous goods in world-wide commerce and the rapid expansion of technology and innovation,

Bearing also in mind the continuing need to meet the growing concern for the protection of life, property and the environment through the safe transport of dangerous goods while facilitating trade,

Aware that, in order to achieve internationally harmonized laws, the Economic Commission for Europe, the International Maritime Organization, the International Civil Aviation Organization and other specialized agencies and international organizations involved in activities related to the transport of dangerous goods and interested Member States have responded positively to the Council's various resolutions adopted since 15 April 1953, and that, being committed to taking the recommendations of the Committee of Experts on the Transport of Dangerous Goods as a basis for the formulation of their requirements and regulations, including those concerning labelling and classification, those organizations therefore rely on the work of the Committee,

A. Work of the Committee of Experts during the biennium 1997-1998

1. Takes note of the report of the Secretary-General on the work of the Committee of Experts on the Transport of Dangerous Goods during the biennium 1997-1998 1/ in particular regarding:

(a) The adoption of new and amended provisions2/ for inclusion in the Recommendations on the Transport of Dangerous Goods 2/;

(b) The completion of the second step of the reformatting of the existing Recommendations into Model Regulations annexed to a basic recommendation 2/, in particular:

1/ E/1999/...

2/ ST/SG/AC.10/25/Add. 1 to 4.

(i) the revision of provisions for the transport of dangerous goods in ;nultimodal portable tanks;

(ii) the inclusion of detailed packing instructions for transport in packagings, including intermediate bulk containers and large packagings; and

(iii) the inclusion, in cooperation with the International Atomic Energy Agency (IAEA), of detailed provisions for the transport of radioactive material;

(c) The completion, pursuant to resolution 1995/6, of proposals for criteria for the classification of flammable, explosive and reactive materials, globally harmonized for various regulatory purposes, in cooperation with ILO in the context of the implementation of Agenda 21, Chapter 19, Programme Area B 3/, except for flammable aerosols;

2. Commends the Secretary-General for the publication of the tenth revised edition of the Recommendations on the Transport of Dangerous Goods 4/, Model Regulations, in all the official languages of the United Nations and for the publication of the second revised edition of the Manual of Tests and Criteria in Arabic and Chinese 5/;

3. Requests the Secretary-General:

(a) To circulate the new and amended recommendations to the Governments of Member States, the specialized agencies, the International Atomic Energy Agency and other international organizations concerned;

(b) To publish an eleventh revised version 6/ of the Recommendations on the Transport of Dangerous Goods (Model Regulations), as amended, and a third revised edition of the Manual of Tests and Criteria 7/ in all the official languages of the United Nations, in the most cost-effective manner, not later than the end of 1999;

(c) To envisage means of publishing the Recommendations on the Transport of Dangerous Goods on CD-ROM if possible as a navigable version, e.g. by commercial arrangement with external contractors.

3/ ST/SG/AC.10/C.3/28/Add.3.

4/ ST/SG/AC.10/1/Rev.10 (United Nations publication Sales No. E.97.VIII.1).

5/ ST/SG/AC.10/11/Rev.2 (United Nations publication, Sales No. A.95.VIII.2 and C.95.VIII.2).

6/ ST/SG/AC.10/1/Rev.11.

7/ ST/SG/AC.10/11/Rev.3.

4. Invites all Governments, the specialized agencies, the International Atomic Energy Agency and the other international organizations concerned to transmit to the Secretary-General their views on the Committee's work, together with any comments that they may wish to make on the amended recommendations;

5. Invites all interested Governments, regional commissions and specialized agencies and the international organizations concerned, when developing or updating appropriate codes and regulations, to take full account of the recommendations of the Committee, particularly those referred to in paragraph 1 (b) above, including as regards the structure and format of such codes and regulations;

B. Programme of work for the biennium 1999-2000

6. Approves the programme of work 8/ of the Committee of Experts on the Transport of Dangerous Goods and its Sub-Committee for the biennium 1999-2000, as follows:

(a) Development of provisions for the transport of gases in gas cylinders and multiple element gas containers;

(b) Review of provisions concerning transport of dangerous goods documentation;

(c) Follow-up to Agenda 21, Chapter 19, Programme Area B (Global harmonization of systems of classification and labelling of chemicals, including development of criteria for the classification of flammable aerosols in cooperation with the International Labour Office, and implementation of already agreed criteria through the Model Regulations on the Transport of Dangerous Goods);

(d) Miscellaneous amendments to the Model Regulations on the Transport of Dangerous goods (Listing and classification, explosives, lithium batteries, limited quantities, packaging issues, portable tank issues, consignment procedures, segregation) and to the Manual of Tests and Criteria;

(e) Development of new provisions for the transport of solid substances in bulk in tanks and freight containers;

(f) Evolution of the Model Regulations on the Transport of Dangerous Goods (rationalized development of the Model Regulations and periodicity of amendments).

8/ ST/SG/AC.10/25, paras. 141-145.

C. Periodicity of amendments to the Recommendations

7. Takes note of the advice of the Committee that

(a) No firm decision as regards a possible future four-year periodicity of amendments should be taken during the period of alignment of the format of the various legal instruments concerning modal aspects on the transport of dangerous goods on that of the Model Regulations, and pending decisions regarding the implementation of the globally harmonized system of classification and labelling of chemicals in accordance with Agenda 21 objectives;

(b) A new revised version of the Recommendations on the Transport of Dangerous Goods (Model Regulations) should be published in 2001 after the 2000 session of the Committee.

8. Notes with satisfaction that this issue has been included in the work programme of the Committee for the next biennium for discussion together with the question of the evolution of the Model Regulations on the Transport of Dangerous Goods in the long term.

D. Report to the Council

9. Requests the Secretary-General to submit a report to the Council in 2001 on the implementation of the present resolution.

1999/YYY Reconfiguration of the Committee of Experts on the Transport of Dangerous Goods into a Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

The Economic and Social Council,

Recalling its resolution 1995/6 of 19 July 1995 on the Role of the Committee of Experts on the Transport of Dangerous Goods in the development of a harmonized system of classification and labelling of chemicals for implementing the recommendations of the United Nations Conference on Environment and Development (UNCED) in Chapter 19 of Agenda 21, Programme Area B,

Recalling also its resolution 1997/3 B of 18 July 1997 whereby global harmonization of systems of classification and labelling of chemicals was given priority in the work programme of the Committee for the 1997-1998 biennium,

Noting with satisfaction that the Committee, in cooperation with the International Labour Office (ILO), has completed the elaboration of proposals for classification criteria concerning physical hazards 1/, except for the flammability of aerosols on which work would continue in the next biennium,

Aware that the Organization for Economic Cooperation and Development (OECD), as focal point for health hazards and hazards to the environment, has also completed most of its tasks with respect to these classification criteria and has established a working group for criteria on mixtures, and that ILO has established a working group for harmonization of chemical hazard communication systems,

Aware also that the Committee, ILO and OECD as focal points designated by the Inter-Organization Programme for Sound Management of Chemicals (IOMC) Coordinating Group for the harmonization of chemical classification systems are expected to make available, through their cooperative efforts, by the year 2000, a globally harmonized hazard classification and compatible labelling system (GHS), including material safety data sheets and easily understandable symbols, in accordance with the objectives of paras. 19-27 of Chapter 19 of Agenda 21,

Noting that the IOMC Coordinating Group has prepared proposals for the implementation of the GHS 2/ consisting in reconfiguring the present Committee of Experts on the Transport of Dangerous Goods and extending its mandate to cover not only transport of dangerous goods but also implementation and updating of the GHS,

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1/ *ST/SG/AC.10/C.3/28/Add.3.*

2/ *ST/SG/AC.10/1998/51.*

Noting also that these proposals have been endorsed by the third meeting of the Intersessional Group (ISG 3) of the Inter-Governmental Forum of Chemical Safety (IFCS) held in Yokohama, Japan (1-4 December 1998), which requested the IOMC Coordinating Group to develop draft terms of reference in cooperation with the Committee,

Noting further that the Committee agreed to the proposals of the IOMC Coordinating Group subject to certain conditions 3/ which have later been taken into account in the draft terms of reference developed by the IOMC Coordinating Group, as annexed to the resolution,

Recognizing that reconfiguring the Committee in accordance with these proposals would be the most cost-effective and efficient option 4/ for the implementation of the GHS, ensuring at the same time cooperation between various authorities and organizations concerned with the sound management of chemicals, harmonization between various regulatory systems and facilitation of trade,

Decides to reconfigure, as from 2001, the Committee of Experts on the Transport of Dangerous Goods and its Sub-Committee into a "Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)" with a Sub-Committee of Experts on the Transport of Dangerous Goods and a Sub-Committee of Experts on the GHS, with terms of reference and arrangements as described in the annex hereto 5/, and provided that the total meeting time does not exceed that presently allocated to the work of the Committee in a biennium,

Invites the reconfigured Committee and the Sub-Committee on GHS to endeavour, whenever possible, to work on a consensus basis,

Invites also Member States interested in participating in the Sub-Committee on GHS to apply for membership at the latest by the end of 2000 so that the composition of that Sub-Committee and of the reconfigured Committee may be decided at the 2001 organization session of the Council,

Requests the Secretary-General to provide, not later than 1 January 2001, adequate resources to the ECE Transport Division, and plan sessions of the Sub-Committees and the reconfigured Committee for 2001 and 2002, as appropriate, in accordance with the annexed arrangements.

3/ *ST/SG/AC.10/25, para. 114.*

4/ *See ST/SG/AC.10/1998/51, annex for various options envisaged.*

5/ *To be elaborated by the IOMC Coordinating Group, see ST/SG/AC.10/25, para. 115.*

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COMMITTEE OF EXPERTS ON THE
TRANSPORT OF DANGEROUS GOODS

REPORT OF THE COMMITTEE OF EXPERTS ON ITS TWENTIETH SESSION (7-16 December 1998)

Addendum 1

Annex 1

Amendments to the Recommendations on the Transport of Dangerous Goods (Model Regulations and Manual of Tests and Criteria)

This annex contains amendments to the Model Regulations on the Transport of Dangerous Goods (refer to the annex to the Recommendations on the Transport of Dangerous Goods, tenth revised edition, ST/SG/AC.10/1/Rev.10) and to the Manual of Tests and Criteria (ST/SG/AC.10/11/Rev.2) adopted by the Committee at its twentieth session.

It is divided in three parts:

Part 1: Amendments to the Model Regulations on the Transport of Dangerous Goods (except class 7 related amendments);

Part 2: Amendments related to class 7 (Radioactive material) (with reference to document ST/SG/AC.10/C.3/30/Add.3);

Part 3: Amendments to the Manual of Tests and Criteria (with reference to document ST/SG/AC.10/1998/14).

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PART 1

AMENDMENTS TO THE MODEL REGULATIONS ANNEXED TO THE TENTH REVISED EDITION OF THE UNITED NATIONS RECOMMENDATIONS ON THE TRANSPORT OF DANGEROUS GOODS (Refer to ST/SG/AC.10/1/Rev.10) (Except for class 7 related amendments)

TABLE OF CONTENTS

Amend the table of contents to reflect amendments to the various parts of the Model Regulations, as appropriate.

Chapter 1.2

1.2.1 Add the following definitions:

"*Large packagings* are packagings consisting of an outer packaging which contains articles or inner packagings and which

(a) are designed for mechanical handling; and

(b) exceed 400 kg net mass or 450 litres capacity but have a volume of not more than 3 m^3."

"*Liner* means a separate tube or bag inserted into a packaging, (including IBCs and large packagings) but not forming an integral part of it, including the closures of its openings."

Chapter 2.0

2.0.1.1 In the title of Division 4.1, delete "and related" after "self-reactive".

2.0.1.3 Amend this paragraph to read as follows:

"2.0.1.3 Certain substances may be assigned to packing groups in accordance with their degree of danger. The packing groups have the following meanings:

Packing Group I:	Substances presenting high danger
Packing Group II:	Substances presenting medium danger
Packing Group III:	Substances presenting low danger."

2.0.3(c) Insert a new sub-paragraph (c) to read as follows:

"(c) liquid desensitised explosives of Class 3;"

Renumber consequently the other sub-paragraphs.

2.0.3(d) Delete "and related" after "self-reactive" (existing sub-paragraph (c)).

2.0.3.1 In the table, add "*" after 3 I, 3 II and 3 III and delete "*" after 5.1 I, 5.1 II and 5.1 III in the first column.

Amend footnote */ to read as follows:

"*/ Substances of Division 4.1 other than self-reactive substances and solid desensitized explosives and substances of Class 3 other than liquid desensitized explosives."

2.0.4 Add a new section 2.0.4 as follows:

"**2.0.4 Transport of samples**

2.0.4.1 When the hazard class of a substance is uncertain and it is being transported for further testing, a tentative hazard class, proper shipping name and identification number shall be assigned on the basis of the consignor's knowledge of the substance and application of:

(a) the classification criteria of these Regulations; and

(b) the precedence of hazards given in 2.0.3.

The most severe packing group possible for the shipping name chosen shall be used.

Where this provision is used the proper shipping name shall be supplemented with the word "sample" (e.g., FLAMMABLE LIQUID, N.O.S. Sample). In certain instances, where a specific proper shipping name is provided for a sample of a substance considered to meet certain classification criteria (e.g., GAS SAMPLE, NON-PRESSURIZED, FLAMMABLE, UN 3167) that shipping name shall be used. When an N.O.S. entry is used to transport the sample, the proper shipping name need not be supplemented with the technical name as required by special provision 274.

2.0.4.2 Samples of the substance shall be transported in accordance with the requirements applicable to the tentative assigned proper shipping name provided:

(a) the substance is not considered to be a substance prohibited for transport by 1.1.2;

(b) the substance is not considered to meet the criteria for Class 1 or considered to be an infectious substance or a radioactive material;

(c) the substance is in compliance with 2.4.2.3.2.5(b) or 2.5.3.2.5.1 if it is a self-reactive substance or an organic peroxide, respectively;

(d) the sample is transported in a combination packaging with a net mass per package not exceeding 2.5 kg; and

(e) the sample is not packed together with other goods."

Chapter 2.1

2.1.3.5.3 Amend to read as follows:

"2.1.3.5.3 Where a substance is assigned to Class 1 but is diluted to be excluded from Class 1 by Test Series 6, this diluted substance (hereafter referred to as desensitized explosive) should be listed in the Dangerous Goods List of Chapter 3.2 with an indication of the highest concentration which excluded it from Class 1 (see 2.3.1.4 and 2.4.2.4) and if applicable, the concentration below which it is no longer deemed subject to these Regulations. New solid desensitized explosives subject to these Regulations should be listed in Division 4.1 and new liquid desensitized explosives should be listed in Class 3. When the desensitized explosive meets the criteria or definition for another class or division, the corresponding subsidiary risk(s) should be assigned to it."

Chapter 2.3

2.3.1.1 Add a new paragraph 2.3.1.1 to read as follows:

"2.3.1.1 Class 3 includes the following substances:

(a) Flammable liquids (see 2.3.1.2 and 2.3.1.3);

(b) Liquid desensitized explosives (see 2.3.1.4).

Renumber existing paragraph 2.3.1.1 and 2.3.1.2 as 2.3.1.2 and 2.3.1.3.

Add a new paragraph 2.3.1.4 to read to read as follows:

"2.3.1.4 Liquid desensitized explosives are explosive substances which are dissolved or suspended in water or other liquid substances, to form an homogeneous liquid mixture to suppress their explosives properties (see 2.1.3.5.3).
Entries in the Dangerous Goods List for liquid desensitized explosives are : UN 1204, UN 2059, UN 3064 and UN 3343."

2.3.2.3(b) Amend to read as follows:

"(b) the mixture or any separated solvent does not meet the criteria for Division 6.1 or Class 8."

2.3.3 Under United Kingdom, replace "BS 2000 Part 34" with "BS EN 22719".

Chapter 2.4

2.4.1.1(a) Delete "and related" after "self-reactive".

2.4.2 In the heading, insert "solid" before "desensitized" and delete "and related" after "self-reactive".

2.4.2.1(b) Delete "and related" after "self-reactive".

2.4.2.3 Delete "and related" after "self-reactive".

2.4.2.3.1.1(b) Delete (and delete letter "(a)" before the previous sub-paragraph).

2.4.2.3.2 Delete "and related" after "self-reactive".

2.4.2.3.2.2 Delete.

2.4.2.3.2.3 Renumber as 2.4.2.3.2.2.

Figure 2.1 (b) Delete the footnote as well as the asterisk in the box of exit F.

2.4.2.3.2.4 Add the following new entry:

SELF-REACTIVE SUBSTANCE	Concentration (%)	Packing method	Control temperature (° C)	Emergency temperature (° C)	UN generic entry	Remarks
2,2'-AZODI(ISOBUTYRONITRILE) as a water based paste	≤ 50%	OP6			3224	

2.4.2.4 Amend to read as follows:

"**2.4.2.4 Division 4.1 *Solid desensitized explosives***

2.4.2.4.1 Definition

Solid desensitized explosives are explosive substances which are wetted with water or alcohols or are diluted with other substances, to form a homogeneous solid mixture to suppress their explosive properties (see 2.1.3.5.3). Entries in the Dangerous Goods List for solid desensitized explosives are UN Nos 1310, UN 1320, UN 1321, UN 1322, UN 1336, UN 1337, UN 1344, UN 1347, UN 1348, UN 1349, UN 1354, UN 1356, UN 1357, UN 1317, UN 1371, UN 2555, UN 2556, UN 2852, UN 2907, UN 3270, UN 3319 and UN 3344.

2.4.2.4.2 Substances that:

(a) have been provisionally accepted into Class 1 according to Test Series 1 and 2 but exempted from Class 1 by Test Series 6;

(b) are not self-reactive substances of Division 4.1;

(c) are not substances of Class 5;

are also assigned to Division 4.1. UN 2956, UN 3241, UN 3242 and UN 3251 are such entries."

Chapter 2.5

2.5.3.2.4 Replace "+10" by "+15" in the column headed "Control Temperature (°C)" and "+15" by "+20" in the column headed "Emergency temperature (°C)" for the entry "tert-BUTYL PEROXY-2-ETHYLHEXANOATE (in tanks)".

Replace "-5" by "+5 " in the column headed "Control Temperature (°C)" and "+5 " by "+10" in the column headed "Emergency Temperature (°C)" for the entry "tert-BUTYL PEROXYPIVALATE (in tanks)".

Replace "-10" by "0" in the column headed "Control Temperature (°C)" and "0" by "+5" in the column headed "Emergency Temperature (°C)" for the entry "DI-(3,5,5-TRIMETHYLHEXANOYL) PEROXIDE (in tanks)".

Replace "≤ 42" by "≤ 52" in the column headed "Concentration (%)" for the third entry for " tert-BUTYL PEROXYNEODECANOATE".

Replace "OP8,M" by "OP8,N,M" in the column headed "Packing Method" for the last entry for "tert-BUTYL HYDROPEROXIDE".

Replace "OP8" by "OP8,N" in the column headed "Packing Method" and "3117" by "3119" in the column headed "Number (Generic entry)" for the last entry for "DI-(3,5,5-TRIMETHYLHEXANOYL) PEROXIDE".

Replace "OP8" by "OP8,N" in the column headed "Packing Method" for the second entry for "2,4,4-TRIMETHYLPENTYL-2-PEROXYNEODECANOATE".

Replace "OP7" by "OP5" in the column headed "Packing Method" and "3115" by "3113" in the column headed "Number (Generic entry)" for the entry for "2,5-DIMETHYL-2,5-DI-(2-ETHYLHEXANOYLPEROXY)HEXANE".

Replace "-10" by "-20" in the column headed "Control Temperature (°C)" and "0" by "-10" in column headed "Emergency Temperature (°C)" for the second entry for "DIISOPROPYL PEROXYDICARBONATE".

Replace "+5" by "0" in the column headed "Control Temperature (°C)" for the second entry for "tert-BUTYL PEROXYNEOHEPTANOATE".

Replace "+10" by "-10" in the column headed "Control Temperature (°C)" for the second entry for "CUMYL PEROXYNEOHEPTANOATE".

Delete "≥28" in the column headed "Diluent type B (%) 1)" and add "≥28" in the column headed "Diluent type A (%)" for the second entry for "CYCLOHEXANONE PEROXIDE(S)".

Add "≥23" in the column headed "Diluent type B (%) 1)" for the second entry for "DI-(2-ETHYLHEXYL) PEROXYDICARBONATE".

Replace "+25" by "+20" in the column headed "Emergency Temperature (°C)" for the entry for "DIMYRISTYL PEROXYDICARBONATE (in IBCs)".

Add "3)" in the column headed "Subsidiary risks and remarks" for the second entry for "ISOPROPYL sec-BUTYL PEROXYDICARBONATE + DI-sec-BUTYL PEROXYDICARBONATE + DI-ISOPROPYL PEROXYDICARBONATE".

Wherever it appears in the column headed "ORGANIC PEROXIDE", amend the name of "1,1-DI-(tert-BUTYLPEROXY)-3,5,5-TRIMETHYLCYCLOHEXANE" to read:

"1,1-DI-(tert-BUTYLPEROXY)-3,3,5-TRIMETHYLCYCLOHEXANE"

Wherever it appears in the column headed "ORGANIC PEROXIDE", amend the name of "2,4,4-TRIMETHYLPENTYL-2-PEROXYNEODECANOATE" to read:

"1,1,3,3-TETRAMETHYLBUTYL PEROXYNEODECANOATE"

Wherever it appears in the column headed "ORGANIC PEROXIDE", amend the name of "2,4,4-TRIMETHYLPENTYL-2-PEROXYPHENOXYACETATE" to read:

"1,1,3,3-TETRAMETHYLBUTYL PEROXYPHENOXYACETATE"

2.5.3.2.4 Add the following new entries:

ORGANIC PEROXIDE	Concentration (%)	Diluent type A (%)	Diluent type B (%) 1)	Inert solid (%)	Water (%)	Packing Method	Control Temperature (°C)	Emergency Temperature (°C)	Number (Generic entry)	Subsidiary risks and remarks
DI-(2-ETHOXYETHYL) PEROXYDICARBONATE	≤ 52		≥48			OP7	-10	0	3115	
tert-HEXYL PEROXYPIVALATE	≤ 72		≥28			OP7	+10	+15	3115	
DI-(3-METHOXYBUTYL) PEROXYDICARBONATE	≤ 52		≥48			OP7	-5	+5	3115	
DI-(3-METHYLBENZOYL) PEROXIDE + BENZOYL (3-METHYLBENZOYL) PEROXIDE + DIBENZOYL PEROXIDE	≤ 20+≤ 18+≤ 4		≥58			OP7	+35	+40	3115	
DI-(2-ETHYLHEXYL) PEROXYDICARBONATE	≤ 62 as a stable dispersion in water					OP8	-15	-5	3117	
2,2-DI-(4,4-DI-(tert-BUTYLPEROXY CYCLOHEXYL) PROPANE	≤ 22		≥78			OP8			3107	
tert-HEXYL PEROXYNEODECANOATE	≤71	≥29				OP7	0	+10	3115	
1,1-DI-(tert-BUTYLPEROXY)-3,3,5-TRIMETHYLCYCLOHEXANE	≤77		≥23			OP7			3105	
3,6,9-TRIETHYL-3,6,9-TRIMETHYL-1,4,7-TRIPEROXONANE	≤42	≥58				OP7			3105	28)
tert-BUTYL PEROXYNEODECANOATE	≤32	≥68				OP8,N	0	+10	3119	
tert-BUTYL PEROXYNEODECANOATE (in IBCs)	≤42 as a stable dispersion in water					N	-5	+5	3119	
CUMYL PEROXYNEODECANOATE (in IBCs)	≤52 as a stable dispersion in water					N	-15	-5	3119	
DI-(2-ETHYLHEXYL) PEROYDICARBONATE (in IBCs)	≤52 as a stable dispersion in water					N	-20	-10	3119	
2,5-DIMETHYL-2,5-DI-(tert-BUTYLPEROXY)HEXANE	≤77			≥23		OP8			3108	
2,5-DIMETHYL-2,5-DI-(tert-BUTYLPEROXY)HEXYNE-3	>86-100					OP5			3101	3)
METHYL ETHYL KETONE PEROXIDE(S)	≤37	≤55			≥8	OP7			3105	9)

Amend the following entries to read:

ORGANIC PEROXIDE	Concentration (%)	Diluent type A (%)	Diluent type B (%) 1)	Inert solid (%)	Water (%)	Packing Method	Control Temperature (°C)	Emergency Temperature (°C)	Number (Generic entry)	Subsidiary risks and remarks
tert-AMYL PEROXYBENZOATE	≤ 100					OP5			3103	
DI-n-PROPYL PEROXYDICARBONATE	≤ 100					OP3	- 25	- 15	3113	
	≤ 77		≥ 23			OP5	- 20	- 10	3113	

Under Notes on 2.5.3.2.4, amend notes 3), 13) and 27) to read as follows:

"3) "EXPLOSIVE" subsidiary risk label required."

"13) "CORROSIVE" subsidiary risk label required."

"27) For concentrations more than 56%, "CORROSIVE" subsidiary risk label required."

Under Notes on 2.5.3.2.4, add a new note 28) to read as follows:

"28) Available active oxygen ≤ 7.6% in diluent type A having a 95% boil-off point in the range of 220 - 260 °C."

Chapter 2.6

2.6.3.1.3(b) Amend to read:

"(b) Those where a relatively low probability exists that pathogens of risk groups 2 or 3 are present. Specimens transported for the purpose of initial diagnosis for other than the presence of pathogens or specimens transported for routine screening tests fall within this Group;"

Chapter 3.1

3.1.1.4 Delete "or "inhibited"".

3.1.2.1 Add "but may be used." at the end of last sentence.

3.1.3.2 Add the following second sentence:

"In addition, the concentration of the solution or mixture may also be indicated, e.g., "ACETONE 75% SOLUTION".

Chapter 3.2

3.2.1 Replace the description of column 8 with the following:

"Packing instruction" - This column contains alpha numeric codes which refer to the relevant packing instructions specified in section 4.1.4. The packing instructions indicate the packaging (including IBCs and large packagings), which may be used for the transport of substances and articles.

A code including the letter "P" refers to packing instructions for the use of packagings described in Chapters 6.1, 6.2 or 6.3.

A code including the letters "IBC" refers to packing instructions for the use of IBCs described in Chapter 6.5.

A code including the letters "LP" refers to packing instructions for the use of large packagings described in Chapter 6.6.

When a particular code is not provided, it means the substance is not authorized in the type of packaging that may be used according to the packing instructions bearing that code.

When N/R is included in the column it means that the substance or article need not be packaged.

The packing instructions are listed in numerical order in section 4.1.4 as follows:

Sub-section 4.1.4.1: Packing instructions concerning the use of packagings (except IBCs and large packagings) (P)
Sub-section 4.1.4.2: Packing instructions concerning the use of IBCs
Sub-section 4.1.4.3: Packing instructions concerning the use of large packagings (LP).

3.2.1 Under description of column 9, add the following text:

"A special packing provision including the letters "PP" refers to special packing provision applicable to the use of packing instructions bearing the Code P in Chapter 4.1.

A special packing provision including the letter "B" refers to special packing provision applicable to the use of packing instructions bearing the code IBC in Chapter 4.1.

A special provision including the letter "L" refers to special packing provision applicable to packing instructions bearing the code "LP" in Chapter 4.1."

DANGEROUS GOODS LIST

***NOTE**: For the allocation of P, IBC and LP Codes in column (8), PP, B and L Codes in column (9), T codes in column (10) and TP codes in column (11), refer to document ST/SG/AC.10/1998/25/Add.3.*

1. Amend as follows:

UN 1002 Insert special provision "292" in column (6).

UN 1086 Delete "VINYL CHLORIDE, INHIBITED or" in column (2).

UN 1210	Amend the name in column (2) to read: "PRINTING INK, flammable or PRINTING INK RELATED MATERIAL (including printing ink thinning or reducing compound), flammable"
UN 1305	Delete "INHIBITED" from the description in column (2).
UN 1331	Insert special provision "293" in column (6).
UN 1408	Replace special provision "40" by "223" in column (6).
UN 1829	Delete "SULPHUR TRIOXIDE, INHIBITED or" in column (2) and replace "TP2" with "TP4" and insert "TP25, TP26" in column (11).
UN 1845	Insert special provision "297" in column (6).
UN 1944	Insert special provision "293" and "294" in column (6).
UN 1945	Insert special provision "294" in column (6).
UN 2054	Replace "3" with "8" in column (3) and insert "3" in column (4). Replace "III" with "I" in column (5) and replace "5L" with "NONE" in column (7). Replace "T2" with "T10" in column (10) and replace "TP1" with "TP2, TP9" in column (11).
UN 2250	Insert "T7" in column (10) and "TP3" in column (11).
UN 2254	Insert special provision "293" in column (6).
UN 2447	Insert "TP26" in column (11).
UN 2530	Delete.
UN 2531	Replace "III" with "II" in column (5).
UN 2794	Insert special provision "295" in column (6).
UN 2795	Insert special provision "295" in column (6).
UN 2990	Insert special provision "296" in column (6).
UN 3028	Insert special provision "295" in column (6).
UN 3057	Insert "TP21" in column (11).
UN 3072	Insert special provision "296" in column (6).

UN 3090 Insert special provision "287" in column (6).

UN 3176 Insert "TP26" in column (11).

UN 3268 Insert special provision "289" in column (6).

UN 3270 Insert special provision "286" in column (6) and amend the name in column (2) to read as follows:

"NITROCELLULOSE MEMBRANE FILTERS, with not more than 12.6% nitrogen, by dry mass".

UN 3353 Insert special provision "289" in column (6).

2. Add the following new entries:

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
0501	PROPELLANT, SOLID	1.4C				NONE	P 114(b)			
0502	ROCKETS with inert head	1.2C				NONE	P 130	PP 67		
0503	AIR BAG INFLATORS, PYROTECHNIC or AIR BAG MODULES, PYROTECHNIC or SEAT-BELT PRETENSIONERS, PYROTECHNIC	1.4G			289	NONE	P 135			
0504	1H-TETRAZOLE	1.1D					P 112(c)	PP 48		
3357	NITROGLYCERIN MIXTURE, DESENSITIZED, LIQUID, N.O.S. with not more than 30% nitroglycerin, by mass	3		II	109, 274, 288					
3358	REFRIGERATING MACHINES containing flammable, non toxic, liquefied gas	2.1			291	NONE	P003	PP 32		

3. Insert portable tank instruction "T50" in column (10) of the Dangerous Goods List for the following entries:

UN 1060, UN 1078, UN 2035, UN 3057, UN 3070, UN 3161 and UN 3163.

4. Add portable tank instruction "T23" in column (10) of the Dangerous Goods List for the following entries: UN 3229, UN 3230, UN 3239 and UN 3240.

5. Replace "INHIBITED" with "STABILIZED" in column (2) of the Dangerous Goods List for the following entries:

UN 1010, UN 1081, UN 1082, UN 1085, UN 1087, UN 1092, UN 1093, UN 1167, UN 1185, UN 1218, UN 1246, UN 1247, UN 1301, UN 1302, UN 1303, UN 1304, UN 1305, UN 1545, UN 1589, UN 1860, UN 1917, UN 1919, UN 1921, UN 1991, UN 2055, UN 2075, UN 2200, UN 2218, UN 2227, UN 2251, UN 2283, UN 2348, UN 2352, UN 2396, UN 2452, UN 2521, UN 2527, UN 2531, UN 2618, UN 2838, UN 3073 and UN 3079.

Chapter 3.3

Section 3.3.1

Special provisions

SP15 Replace "special provisions with respect to packaging." with "packing instruction P405." at the end of this special provision.

SP 25 Delete.

SP 29 Delete "and packaging tests".

SP 40 Delete.

SP 76 Delete.

SP 80 Delete.

SP 114 Delete.

SP 117 Add at the end, the following two sentences:

"Fish meal or fish scrap shall not be transported if the temperature at the time of loading exceeds 35 °C or 5 °C above the ambient temperature, whichever is higher. Fish scrap or fish meal shall contain at least 100 ppm of anti-oxidant (ethoxyquin) at the time of shipment."

SP 123 Delete.

SP 132 Delete the first sentence.

SP 133 Amend to read as follows:

"133 When this substance is packed in accordance with P409, the "EXPLOSIVE" label may be dispensed with."

SP 162 Amend to read as follows:

"162 Mixtures with a flash point less than 23 °C shall bear a FLAMMABLE LIQUID subsidiary risk label."

SP 170 Delete.

SP 171 Delete.

SP 187 Delete.

SP 188 (a) Amend to read as follows:

"(a) For a lithium metal or lithium alloy cell with a liquid cathode, the lithium content is not more than 0.5 g, for a lithium metal or lithium alloy cell with a solid cathode, the lithium content is not more than 1 g, and for a lithium-ion cell, the equivalent lithium content is not more than 1.5 g;"

(b) Amend to read as follows:

"(b) For a lithium metal or lithium alloy battery with liquid cathodes, the aggregate lithium content is not more than 1 g, for a lithium metal or lithium alloy battery with solid cathodes, the aggregate lithium content is not more than 2 g, and for a lithium-ion battery, the aggregate equivalent lithium content is not more than 8 g;"

(f) Amend the beginning to read as follows:

"(f) If, when fully charged, the aggregate lithium content of the anodes in a liquid cathode battery is more than 0.5 g, or of the aggregate lithium content of the anodes in a solid cathode battery is more than 1 g, it does not contain a liquid or gas..."
[remainder unchanged].

(g) Amend to read as follows:

"(g) The lithium content of the anode of each cell, when fully charged, is not more than 5 g;"

(h) Amend to read as follows:

"(h) The aggregate lithium content of the anodes of each battery, when fully charged, is not more than 25 g;"

Add the following sentence at the end of SP188:

"As used above and elsewhere in these Regulations, "lithium content" means the mass of lithium in the anode of a lithium metal or lithium alloy cell, except in the case of a lithium-ion cell the "equivalent lithium content" in grams is calculated to be 0.3 times the rated capacity in ampere-hours."

SP 201 Delete the sixth sentence.

SP 209 Delete the last sentence.

SP 214 Delete.

SP 215 Delete the second and third paragraphs.

SP 216 Delete the second sentence.

SP 217 Delete the second sentence.

SP 218 Delete the second sentence.

SP 219 Delete the first sentence.

SP 221 Delete "and shall have a maximum net quantity per package of 5 litres or 5 kg".

SP 229 Delete.

SP 230 Add a new first sentence to read:

"This entry applies to cells and batteries containing lithium in any form, including lithium polymer and lithium ion cells and batteries."

Delete (b), (c) and (g), and renumber consequently.

Amend existing sub-paragraph (f) (new (d)) to read as follows:

"(d) Each battery containing cells or series of cells connected in parallel is equipped with effective means as necessary to prevent dangerous reverse current flow (e.g., diodes, fuses, etc.);"

SP 231 Delete.

SP 233 Delete.

SP 235 Delete the third and the last sentences.

SP 236 Delete "each separately packed in an inner packaging" in the first sentence.
Delete "and be limited to a quantity of 125 ml per inner packaging if liquid, and 500 g if solid" in the second sentence.
Delete the third sentence.

SP 237 Amend to read as follows:

"237 The membrane filters, including paper separators, coating or backing materials, etc., that are present in transport, shall not be liable to propagate a detonation as tested by one of the tests described in the Manual of Tests and Criteria, Part I, Test series 1(a).

In addition, the competent authority may determine, on the basis of the results of suitable burning rate tests taking account of the standard tests in the Manual of Tests and Criteria, Part III, sub-section 33.2.1, that nitrocellulose membrane filters in the form in which they are to be transported are not subject to the provisions of these Regulations applicable to flammable solids in Division 4.1."

SP 238 Delete the last sentence.

SP 239 Delete the second and third sentences of the second paragraph.
Delete the last sentence of the third paragraph.

SP 240 Replace "or sodium batteries" by ", sodium batteries or lithium batteries".

SP 248 Delete.

SP 251 Delete the second and fourth sentences of the second paragraph.
Delete the third paragraph.

SP 269 Delete.

SP 280 Delete the two last sentences.

SP 283 Amend to read as follows:

"283 Articles, containing gas, intended to function as shock absorbers, including impact energy-absorbing devices, or pneumatic springs are not subject to these Model Regulations provided each article:

(a) each article has a gas space capacity not exceeding 1.6 litres and a charge pressure not exceeding 280 bar where the product of the capacity (litres) and charge pressure (bars) does not exceed 80 (i.e 0.5 litre gas space and 160 bar charge pressure, 1 litre gas space and 80 bar charge pressure, 1.6 litre gas space and 50 bar charge pressure, 0.28 litre gas space and 280 bar charge pressure);

(b) each article has a minimum burst pressure of 4 times the charge pressure at 20°C for products not exceeding 0.5 litre gas space capacity and 5 times charge pressure for products greater than 0.5 litre gas space capacity;

(c) each article is manufactured from material which will not fragment upon rupture;

(d) each article is manufactured in accordance with a quality assurance standard acceptable to the competent authority; and

(e) the design type has been subjected to a fire test demonstrating that pressure in the article is relieved by means of a fire degradable seal or other pressure relief device, such that the article will not fragment and that the article does not rocket."

SP 284 Delete "In addition to the requirements of Packing Group II applicable to the package," in sub-paragraph (b).
Delete the sub-paragraph (d).

SP 286 Add the following new special provision:

"286 Nitrocellulose membrane filters covered by this entry, each with a mass not exceeding 0.5g, are not subject to these Regulations when contained individually in an article or a sealed packet."

SP 287 Add the following new special provision:

"287 New, uncycled and uncharged lithium ion cells and batteries are not subject to these Regulations if:

(a) the electrolyte does not meet the definition of any class or division in these Regulations; or

(b) the electrolyte meets the definition of a hazard class or division in these Regulations, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow."

SP 288 Add the following new special provision:

"288 These substances shall not be classified and transported unless authorized by the competent authority on the basis of results from Series 2 tests and a Series 6(c) test on packages as prepared for transport (see 2.1.3.1).

SP 289 Add the following new special provision:

"289 Air bags or seat-belts installed in vehicles or in completed vehicle components such as steering columns, door panels, seats etc. are not subject to these Regulations."

SP 291 Add the following new special provision:

"291 Flammable liquefied gases shall be contained within refrigerating machine components. These components shall be designed and tested to at least three times the working pressure of the machinery. The refrigerating machines shall be designed and constructed to contain the liquefied gas and preclude the risk of bursting or cracking of the pressure retaining components during normal conditions of transport. Refrigerating machines are considered not subject to these Regulations if containing less than 12 kg of gas."

SP 292 Add the following new special provision:

"292 Only mixtures with not more than 23.5% oxygen may be transported under this entry. A Division 5.1 subsidiary risk label is not required for any concentrations within this limit."

SP 293 Add the following new special provision:

"293 The following definitions apply to matches:

(a) Fusee matches are matches the heads of which are prepared with a friction-sensitive igniter composition and a pyrotechnic composition which burns with little or no flame, but with intense heat;

(b) Safety matches are combined with or attached to the box, book or card that can be ignited by friction only on a prepared surface;

(c) Strike anywhere matches are matches that can be ignited by friction on a solid surface;

(d) Wax Vesta matches are matches that can be ignited by friction either on a prepared surface or on a solid surface."

SP 294 Add the following new special provision:

"294 Safety matches and wax "Vesta" matches in outer packagings not exceeding 25 kg net mass are not subject to any other requirement (except marking) of this Model Regulation when packaged in accordance with packing instruction P406."

SP 295 Add the following new special provision:

"295 Batteries need not be individually marked and labelled if the pallet bears the appropiate mark and label."

SP 296 Add the following new special provision:

"296 These articles may contain:

(a) Division 2.2 compressed gases;

(b) signal devices (Class 1) which may include smoke and illumination signal flares; signal devices must be packed in plastic or fibreboard inner packagings;

(c) electric storage batteries;

(d) first aid kits; or

(e) strike anywhere matches."

SP 297 Add the following new special provision:

"297 For each shipment by air exceeding 2.3 kg per package, advance arrangements shall be made between the shipper and each carrier. Not more than 200 kg of solid carbon dioxide may be transported in any one cargo compertment or bin on any aircraft except by specific and special written arrangement between the shipper and the aircraft operator.

Transport units containing solid carbon dioxide, when transported on board ocean vessels, shall be conspicuously marked on two sides "WARNING CO2 SOLID (DRY ICE)". Other packagings containing solid carbon dioxide, when transported on board ocean vessels, shall be marked "CARBON DIOXIDE, SOLID-DO NOT STOW BELOW DECK".

Carbon dioxide, solid (dry ice) is excepted from the shipping paper requirements if the package is marked "Carbon dioxide, solid" or "Dry ice" and is marked with an indication that the substance being refrigerated is used for diagnostic or treatment purposes (e.g., frozen medical specimens)."

Chapter 4.1

Replace Chapter 4.1 by the revised Chapter in ST/SG/AC.10/25/Add.4.

Chapter 4.2

4.2.1.1 Replace "(T1 to T34)" with "(T1-T23)" in the third sentence.

4.2.1.9.6 (a) Add "or maximum temperature of the substance during transport in the case of a heated substance" after "at 20°C,".

4.2.1.9.7 Add the following new paragraph:

"4.2.1.9.7 Forklift pockets of portable tanks shall be closed off when the tank is filled. This provision does not apply to portable tanks which according to 6.6.3.13.4 need not be provided with a means of closing off the forklift pockets."

4.2.1.11 Add "(other than Division 4.1 self-reactive substances)" after "Class 4 substances".

4.2.1.11.1 Delete existing text and insert "[reserved]".

Add the following Note:

"***Note**: For Division 4.1 self-reactive substances, see 4.2.1.13.1.*"

4.2.1.13 Insert "and Division 4.1 self-reactive substances" after "Division 5.2 substances."

4.2.1.13.1 Replace "Organic peroxide" with "substance".

4.2.1.13.2 Replace "organic peroxides (Type F)" with "Type F organic peroxides or Type F self-reactive substances" in the first sentence.

Replace "organic peroxide" with "substance" in the second sentence.

4.2.1.13.3 Insert "or self-reactive substances" after "organic peroxides".

4.2.1.13.6 Replace "organic peroxide" with "substances".

4.2.1.13.8 Add ", or a combination of the two," after "types".

4.2.1.13.11
4.2.1.13.12
4.2.1.13.14 } Replace "organic peroxide" with "substances".

4.2.1.13.15 Insert "and self-reactive substances" after "organic peroxides" and replace "T34" with "T23".

4.2.2.9 Add the following new paragraph:

"4.2.2.9 Forklift pockets of portable tanks shall be closed off when the tank is filled. This provision does not apply to portable tanks which according to 6.6.4.12.4 need not be provided with a means of closing off the forklift pockets."

4.2.3.9 Add the following new paragraph:

"4.2.3.9 Forklift pockets of portable tanks shall be closed off when the tank is filled. This provision does not apply to portable tanks which according to 6.6.4.12.4, as appropriate, need not be provided with a means of closing off the forklift pockets."

4.2.4.1.1 Replace "(T1 to T36)" with "(e.g. T1)" in the second sentence.
Replace "(TP1 to TP24)" with "(e.g. TP1)" in the last sentence..

4.2.4.2.2 Delete "(T1-T34)" in the first sentence.

Amend the second sentence to read as follows:

"In T23, self-reactive substances of Division 4.1 and Division 5.2 organic peroxides permitted to be transported in portable tanks are listed along with the applicable control and emergency temperatures."

4.2.4.2.5 Replace the existing table with the following:

Portable tank instruction specified	Portable tank instructions also permitted
T1	T2, T3, T4, T5, T6, T7, T8, T9, T10, T11, T12, T13, T14, T15, T16, T17, T18, T19, T20, T21, T22
T2	T4, T5, T6, T7, T8, T9, T10, T11, T12, T13, T14, T15, T16, T17, T18, T19, T20, T21, T22
T3	T4, T5, T6, T7, T8, T9, T10, T11, T12, T13, T14, T15, T16, T17, T18, T19, T20, T21, T22
T4	T5, T6, T7, T8, T9, T10, T11, T12, T13, T14, T15, T16, T17, T18, T19, T20, T21, T22
T5	T10, T12, T14, T16, T18, T19, T20, T22
T6	T7, T8, T9, T10, T11, T12, T13, T14, T15, T16, T17, T18, T19, T20, T21, T22
T7	T8, T9, T10, T11, T12, T13, T14, T15, T16, T17, T18, T19, T20, T21, T22
T8	T9, T10, T13, T14, T19, T20, T21, T22
T9	T10, T13, T14, T19, T20, T21, T22
T10	T14, T19, T20, T22
T11	T12, T13, T14, T15, T16, T17, T18, T19, T20, T21, T22
T12	T14, T16, T18, T19, T20, T22
T13	T14, T19, T20, T21, T22
T14	T19, T20, T22
T15	T16, T17, T18, T19, T20, T21, T22
T16	T18, T19, T20, T22
T17	T18, T19, T20, T21, T22
T18	T19, T20, T22
T19	T20, T22
T20	T22
T21	T22
T22	None
T23	None

4.2.4.2.6/
T1-T33 Replace the table with the following:

T1 - T22	PORTABLE TANK INSTRUCTIONS			T1 -T22
These portable tank instructions apply to liquid and solid substances of Classes 3 to 9. The general provisions of section 4.2.1 and the requirements of section 6.6.2 shall be met.				
Portable tank instruction	**Minimum test pressure (bar)**	**Minimum shell thickness (in mm-reference steel) (see 6.2.4)**	**Pressure-relief requirements (see 6.6.2.8)**	**Bottom opening requirements (see 6.6.2.6)**
T1	1.5	See 6.6.2.4.2	Normal	See 6.6.2.6.2
T2	1.5	See 6.6.2.4.2	Normal	See 6.6.2.6.3
T3	2.65	See 6.6.2.4.2	Normal	See 6.6.2.6.2
T4	2.65	See 6.6.2.4.2	Normal	See 6.6.2.6.3
T5	2.65	See 6.6.2.4.2	See 6.6.2.8.3	Not Allowed
T6	4	See 6.6.2.4.2	Normal	See 6.6.2.6.2
T7	4	See 6.6.2.4.2	Normal	See 6.6.2.6.3
T8	4	See 6.6.2.4.2	Normal	Not allowed
T9	4	6mm	Normal	Not allowed
T10	4	6mm	See 6.6.2.8.3	Not allowed
T11	6	See 6.6.2.4.2	Normal	See 6.6.2.6.3
T12	6	See 6.6.2.4.2	See 6.6.2.8.3	See 6.6.2.6.3
T13	6	6mm	Normal	Not allowed
T14	6	6mm	See 6.6.2.8.3	Not allowed
T15	10	See 6.6.2.4.2	Normal	See 6.6.2.6.3
T16	10	See 6.6.2.4.2	See 6.6.2.8.3	See 6.6.2.6.3
T17	10	6mm	Normal	See 6.6.2.6.3
T18	10	6mm	See 6.6.2.8.3	See 6.6.2.6.3
T19	10	6mm	See 6.6.2.8.3	Not allowed
T20	10	8mm	See 6.6.2.8.3	Not allowed
T21	10	10mm	Normal	Not allowed
T22	10	10mm	See 6.6.2.8.3	Not allowed

4.2.4.2.6/
T34 1. Amend the heading of portable tank instruction T34 to read as follows:

"

T23	PORTABLE TANK INSTRUCTION							T23
This portable tank instruction applies to self-reactive substances of Division 4.1 and to Division 5.2 organic peroxides. The general provisions of section 4.2.1 and the requirements of section 6.6.2 shall be met. The provisions specific to self-reactive substances of Division 4.1 and organic peroxides of Division 5.2 in 4.2.1.13 shall also be met.								
UN No.	Substance	Min. test pressure (bar)	Min. shell thickness (mm-reference steel)	Bottom opening requir-ements	Pressure relief requir-ements	Filling limits	Control temp-erature	Emergency temp-erature

"

2. Add the following new entries:

3229	SELF-REACTIVE LIQUID TYPE F	4	See 6.6.2.4.2	See 6.6.2.6.3	See 6.6.2.8.2 4.2.1.13.6 4.2.1.13.7 4.2.1.13.8	See 4.2.1.13.13		
3230	SELF-REACTIVE SOLID TYPE F	4	See 6.6.2.4.2	See 6.6.2.6.3	See 6.6.2.8.2 4.2.1.13.6 4.2.1.13.7 4.2.1.13.8	See 4.2.1.13.13		
3239	SELF-REACTIVE LIQUID TYPE F, TEMPERATURE CONTROLLED	4	See 6.6.2.4.2	See 6.6.2.6.3	See 6.6.2.8.2 4.2.1.13.6 4.2.1.13.7 4.2.1.13.8	See 4.2.1.13.13	*/	*/
3240	SELF-REACTIVE SOLID TYPE F, TEMPERATURE CONTROLLED	4	See 6.6.2.4.2	See 6.6.2.6.3	See 6.6.2.8.2 4.2.1.13.6 4.2.1.13.7 4.2.1.13.8	See 4.2.1.13.13	*/	*/

"

3. Add an asterisk in the columns "Control temperature" and "Emergency temperature" for UN 3119 and UN 3120 and add the following footnote:

*/ As approved by the competent authority.

4. Under UN 3119, amend as follows:

Replace "+10 °C" by "+15 °C" in the column headed "Control temperature" and "+15 °C" by "+20 °C" in the column headed "Emergency temperature" for the entry "tert-Butyl peroxy-2-ethylhexanoate, not more than 32% in diluent type B" .

Replace "-5 °C" by "+5 °C" in the column headed "Control temperature" and "+5 °C" by "+10 °C" in the column headed "Emergency temperature" for the entry "tert-Butyl peroxypivalate, not more than 27% in diluent type B".

Replace "-10 °C" by "0 °C" in the column headed "Control temperature" and "0 °C" by "+5 °C" in the column headed "Emergency temperature" for the entry "Di-(3,5,5-trimethylhexanoyl) peroxide, not more than 38% in diluent type A".

4.2.4.2.6/
T50 Replace "INHIBITED" with "STABILIZED" in the column "Non-refrigerated liquefied gases" for the following UN entries:

UN 1010, UN 1082, UN 1085 and UN 1087.

Delete "VINYL CHLORIDE, INHIBITED or" in the column "Non-refrigerated liquefied gases" for UN 1086.

4.2.4.2.6/
T50 Add the following new entries:

"

UN No.	Non-refrigerated liquefied gases	Max. allowable working pressure (bar) Small; Bare; Sunshield; Insulated	Openings below liquid level	Pressure relief requirements	Maximum filling ratio (kg/l)
1060	Methylacetylene and propadiene mixture, stabilized	28.0 24.5 22.0 20.0	Allowed	Normal	0.43
1078	Refrigerant gas, n.o.s.	See MAWP definition in 6.6.3.1	Allowed	Normal	4.2.2.7
2035	1,1,1-Trifluoroethane (Refrigerant gas R 143a)	31.0 27.5 24.2 21.8	Allowed	Normal	0.76
3057	Trifluoroacetyl chloride	14.6 12.9 11.3 9.9	Not allowed	6.6.3.7.3	1.17
3070	Ethylene oxide and dichlorodifluoromethane mixture with not more than 12.5% ethylene oxide	14.0 12.0 11.0 9.0	Allowed	6.6.3.7.3	1.09
3161	Liquefied gas, flammable, n.o.s.	See MAWPdefinition in 6.6.3.1	Allowed	Normal	See 4.2.2.7
3163	Liquefied gas, n.o.s.	See MAWP definition in 6.6.3.1	Allowed	Normal	See 4.2.2.7

"

4.2.4.3 Delete the following portable tank special provisions: TP 11, TP14 and TP15.

Add new portable tank special provisions TP25, TP26, TP27, TP28 and TP29 to read as follows:

"TP25 Sulphur trioxide 99.95% pure and above may be transported in tanks without an inhibitor provided that it is maintained at a temperature equal to or above 32.5°C.

TP26 When transported under heated conditions, the heating device shall be fitted outside the shell. For UN 3176 this requirement only applies when the substance reacts dangerously with water.

TP27 A portable tank having a minimum test pressure of 4 bar may be used if it is shown that a test pressure of 4 bar or less is acceptable according to the test pressure definition in 6.6.2.1.

TP28 A portable tank having a minimum test pressure of 2.65 bar may be used if it is shown that a test pressure of 2.65 bar or less is acceptable according to the test pressure definition in 6.6.2.1.

TP29 A portable tank having a minimum test pressure of 1.5 bar may be used if it is shown that a test pressure of 1.5 bar or less is acceptable according to the test pressure definition in 6.6.2.1."

Chapter 5.2

5.2.2.1.1 Add "and subsidiary" after "primary" and replace "5.2.2.2.2.1" with "5.2.2.2.2" in the first sentence.

Replace the second sentence with the following:

"The "EXPLOSIVE" subsidiary risk label is model No.1."

5.2.2.1.2 Add "shall be affixed" after "risk label" and replace "hazard" with "risk" in the first sentence.

5.2.2.1.3 Replace "hazard" with "risk" twice in the first and second sentences.

5.2.2.1.3.1 Delete "0" in "No. 06.1" and "No. 04.1".

5.2.2.1.4 In the table:

Replace "05" with "5.1" in column "Subsidiary risk label(s)" for second row of Division 2.2.

Replace "03" with "2.1" in column "Subsidiary risk label(s)" for second row of Division 2.3.

Replace "05" with "5.1" in column "Subsidiary risk label(s)" for third row of Division 2.3.

Replace "05, 08" with "5.1, 8" in column "Subsidiary risk label(s)" for fourth row of Division 2.3.

Replace "08" with "8" in column "Subsidiary risk label(s)" for fifth row of Division 2.3.

Replace "03, 08" with "2.1, 8" in column "Subsidiary risk label(s)" for sixth row of Division 2.3.

5.2.2.1.5 Delete the last sentence.

5.2.2.1.6(c) Replace "hazard" with "risk".

5.2.2.1.9 Delete "(model No. 03)".

5.2.2.1.9(a) Delete "0" in "(model no. 01)".

5.2.2.1.9(b) Delete "0" in "(model no. 08)".

5.2.2.1.10 Replace "hazard" with "risk".

5.2.2.2.1.4 Delete "it" in the fourth sentence.

5.2.2.2.1.5 Delete this paragraph and renumber the remaiding paragraphs consequently.

5.2.2.2.1.7 (Renumbered par. 5.2.2.2.1.6) Replace "texts" with "text" and add "for" after "except" in this sentence.

5.2.2.2.2 Delete "5.2.2.2.2.1 *Specimen primary risks labels*".

In the text following the labels for Class 1, Replace:

"** Place for division
* Place for compatibility group"

with:

"** Place for division - to be left blank if explosive is the subsidiary risk
* Place for compatibility group - to be left blank if explosive is the subsidiary risk".

In the text following the label (No. 5.1), replace "Oxydizing" with "Oxidizing".

5.2.2.2.2.2 Delete text and labels.

Chapter 5.4

5.4.1.1.5.2 Delete "(model no. 01)".

5.4.1.2.2 Add ", with no additional information interspersed" at the end of the first sentence.

Chapter 6.1

6.1.1.4 Add the following new paragraph:

"6.1.1.4 Packagings shall be manufactured and tested under a quality assurance programme which satisfies the competent authority in order to ensure that each manufactured packaging meets the requirements of this Chapter."

6.1.2.7 In the table, under "1. Drums" , insert at the end:

"

kind	Material	Category	Code	Paragraph
N.	Metal, other than steel or aluminium	non-removable head	N1	6.1.4.3
		removable head	N2	

"

6.1.4.3 Insert the following new sub-section 6.1.4.3 (and renumber accordingly existing sub-section 6.1.4.3 and following sub-sections, as well as all corresponding cross-references).

"6.1.4.3 Drums of metal other than aluminium or steel

1N1 non-removable head
1N2 removable head.

6.1.4.3.1 The body and heads shall be constructed of a metal or of a metal alloy other than steel or aluminium. Material shall be of a suitable type and of adequate thickness in relation to the capacity of the drum and to its intended use.

6.1.4.3.2 Chime seams, if any, shall be reinforced by the application of separate reinforcing rings. All seams, if any, shall be joined (welded, solded, etc.) in accordance with the technical state of the art for the used metal or metal alloy.

6.1.4.3.3 The body of a drum of a capacity greater than 60 litres shall, in general, have at least two expanded rolling hoops or, alternatively, at least two separate rolling hoops. If there are separate rolling hoops they shall be fitted tightly on the body and so secured that they cannot shift. Rolling hoops shall not be spot welded.

6.1.4.3.4 Openings for filling, emptying and venting in the bodies or heads of non-removable head (1N1) drums shall not exceed 7 cm in diameter. Drums with larger openings are considered to be of the removable head type (1N2). Closures for openings in the bodies and heads of drums shall be so designed and applied that they will remain secure and leakproof under normal conditions of transport. Closure flanges shall be joined in place (welded, solded, etc.) in accordance with the technical state of the art for the used metal or metal alloy so that the seam join is leakproof. Gaskets or other sealing elements shall be used with closures, unless the closure is inherently leakproof.

6.1.4.3.5 Closure devices for removable head drums shall be so designed and applied that they will remain secure and drums will remain leakproof under normal conditions of transport. Gaskets or other sealing elements shall be used with all removable heads.

6.1.4.3.6 Maximum capacity of drum: 450 litres.

6.1.4.3.7 Maximum net mass: 400 kg."

6.1.5.3.1 In the table, insert "Metal drums, other than steel or aluminium drums" under "Aluminium drums".

Chapter 6.3

6.3.2.6(b) Read the last sentence as follows:

"Following each impact, there shall be no leakage from the primary receptacle(s)."

Chapter 6.5

6.5.1.2 Delete the definition of Liner.

6.5.1.4.1(a) Amend the heading of table as follows:

"For solids, loaded or discharged"

6.5.1.4.4 Add the following new paragraph:

"6.5.1.4.4 The letter "W" may follow the IBC code. The letter "W" signifies that the IBC, although of the same type indicated by the code, is manufactured to a specification different from those in section 6.5.3 and is considered equivalent in accordance with the requirements in 6.5.1.1.2."

6.5.2.1.1 Amend the first sentence to read as follows:

"Each IBC manufactured and intended for use according to these Regulations shall bear markings which are durable, legible and placed in a location so as to be readily visible. Letters, numerals and symbols shall be at least 12 mm high and shall show:"

6.5.2.2.4 Amend to read as follows:

"6.5.2.2.4 Where a composite IBC is designed in such a manner that the outer casing is intended to be dismantled for transport when empty (such as for return of the IBC for reuse to the original consignor), each of the parts intended to be detached when so dismantled shall be marked with the month and year of manufacture and the name or symbol of the manufacturer and other identification of the IBC as specified by the competent authority (6.5.2.1.1(f))."

6.5.3.1.1(c) Delete the second sentence.

6.5.3.1.6 In sub-paragraph (a), replace the existing table with the following new table:

"

Capacity (C) in litres	Wall thickness (T) in mm			
	Types 11A, 11B, 11N		Types 21A, 21B, 21N, 31A, 31B, 31N	
	Unprotected	Protected	Unprotected	Protected
$C \leq 1000$	2.0	1.5	2.5	2.0
$1000 < C \leq 2000$	$T = C/2000 + 1.5$	$T = C/2000 + 1.0$	$T = C/2000 + 2.0$	$T = C/2000 + 1.5$
$2000 < C \leq 3000$	$T = C/2000 + 1.5$	$T = C/2000 + 1.0$	$T = C/1000 + 1.0$	$T = C/2000 + 1.5$

"

In sub-paragraph (b), add "(see (c))" at the end of the definition of the variable Rm_1.

Add a new sub-paragraph (c) as follows:

"(c) For purposes of the calculation described in (b), the guaranteed minimum tensile strength of the metal to be used (Rm_1) shall be the minimum value according to national or international material standards.
However, for austenitic steels, the specified minimum value for Rm according to the material standards may be increased by up to 15% when a greater value is attested in the material inspection certificate. When no material standard exists for the material in question, the value of Rm shall be the minimum value attested in the material inspection certificate."

6.5.3.1.7	Replace "4.1.3.2" by "4.1.1.4".
6.5.4.3.5	Replace "31 C" with "31 N" in the first box of the first column.
6.5.4.5.2	Amend "its" to "their" (twice).
6.5.4.6.3 (a) (iii)	Insert "other" before "types".
6.5.4.7.1	Insert "a" before "design".
6.5.4.8.4.2	Replace "4.1.2.2" by "4.1.1.4".
6.5.4.8.5 (c)	Amend "renders" to "would render".
6.5.4.9.3	Delete "(d)" and move sentence "The same or different... each drop." to the far left. Change semi-colon to fullstop at end of (c).

Chapter 6.6

Renumber existing Chapter 6.6 as Chapter 6.7 and insert a new Chapter 6.6 as follows:

"**CHAPTER 6.6**

REQUIREMENTS FOR THE CONSTRUCTION AND TESTING OF LARGE PACKAGINGS

6.6.1 General

6.6.1.1 The requirements of this Chapter do not apply to:

- Class 2, except articles including aerosols;
- Class 6.2, except clinical waste of UN 3291;
- Class 7 packages containing radioactive material.

6.6.1.2 Large packagings shall be manufactured and tested under a quality assurance programme which satisfies the competent authority in order to ensure that each manufactured packaging meets the requirements of this Chapter.

6.6.2 Code for designating types of large packagings

The code used for large packagings consist of:

(a) two Arabic numerals:

50 for rigid large packagings; or
51 for flexible large packagings; and

(b) capital letters in Latin characters indicating the nature of the material, e.g. wood, steel etc. The capital letters used shall be those shown in 6.1.2.6.

6.6.3 Marking

6.6.3.1 *Primary marking*. Each large packaging manufactured and intended for the use according to these Regulations shall bear durable and legible markings showing:

(a) the United Nations packaging symbol

;

For metal large packagings on which the marking is stamped or embossed, the capital letters "UN" may be applied instead of the symbol;

(b) the code "50" designating a large rigid packaging or "51" for flexible large packagings, followed by the material type in accordance with 6.5.1.4.1(b);

(c) a capital letter designating the packing group(s) for which the design type has been approved:

X for packing groups I, II and III
Y for packing groups II and III
Z for packing group III only;

(d) the month and year (last two digits) of manufacture;

(e) the State authorising the allocation of the mark; indicated by the distinguishing sign for motor vehicles in international traffic;

(f) the name or symbol of the manufacturer and other identification of the large packagings as specified by the competent authority;

(g) the stacking test load in kg. For large packagings not designed for stacking the figure "0" shall be shown;

(h) the maximum permissible gross mass in kilograms.

The primary marking required above shall be applied in the sequence of the sub-paragraphs.

6.6.3.2 *Examples of the marking*:

u n	50 A/X/05 2500/1000	96/N/PQRS	For a large steel packaging suitable for stacking; stacking load: 2500 kg; maximum gross mass: 1000 kg.
u n	50 H/Y04 0/800	95/D/ABCD 987	For a large plastics packaging not suitable for stacking; maximum gross mass: 800 kg.
u n	51H/Z/0697/S/1999 0/500		For a large flexible packaging not suitable for stacking; maximum gross mass: 500 kg.

6.6.4 Specific requirements for large packagings

6.6.4.1 ***Specific requirements for metal large packagings***

50A	steel
50B	aluminium
50N	metal (other than steel or aluminium)

6.6.4.1.1 The large packaging shall be made of suitable ductile metal in which the weldability has been fully demonstrated. Welds shall be skillfully made and afford complete safety. Low-temperature performance shall be taken into account when appropriate.

6.6.4.1.2 Care shall be taken to avoid damage by galvanic action due to the juxtaposition of dissimilar metals.

6.6.4.2 ***Specific requirements for flexible material large packagings***

51H	flexible plastics
51M	flexible paper

6.6.4.2.1 The large packaging shall be manufactured from suitable materials. The strength of the material and the construction of the flexible large packagings shall be appropriate to its capacity and its intended use.

6.6.4.2.2 All materials used in the construction of flexible large packagings of types 51M shall, after complete immersion in water for not less than 24 hours, retain at least 85% of the tensile strength as measured originally on the material conditioned to equilibrium at 67% relative humidity or less.

6.6.4.2.3 Seams shall be formed by stitching, heat sealing, glueing or any equivalent method. All stitched seam-ends shall be secured.

6.6.4.2.4 Flexible large packagings shall provide adequate resistance to ageing and to degradation caused by ultraviolet radiation or the climatic conditions, or by the substance contained, thereby rendering them appropriate to their intended use.

6.6.4.2.5 For plastics flexible large packagings where protection against ultraviolet radiation is required, it shall be provided by the addition of carbon black or other suitable pigments or inhibitors. These additives shall be compatible with the contents and remain effective throughout the life of the large packaging. Where use is made of carbon black, pigments or inhibitors other than those used in the manufacture of the tested design type, re-testing may be waived if changes in the carbon black content, the pigment content or the inhibitor content do not adversely affect the physical properties of the material of construction.

6.6.4.2.6 Additives may be incorporated into the material of the large packaging to improve the resistance to ageing or to serve other purposes, provided that these do not adversely affect the physical or chemical properties of the material.

6.6.4.2.7 When filled, the ratio of height to width shall be not more than 2:1.

6.6.4.3 ***Specific requirements for plastics large packagings***

50H rigid plastics

6.6.4.3.1 The large packaging shall be manufactured from suitable plastics material of known specifications and be of adequate strength in relation to its capacity and its intended use. The material shall be adequately resistant to ageing and to degradation caused by the substance contained or, where relevant, by ultraviolet radiation. Low temperature performance shall be taken into account when appropriate. Any permeation of the substance contained shall not constitute a danger under normal conditions of transport.

6.6.4.3.2 Where protection against ultraviolet radiation is required, it shall be provided by the addition of carbon black or other suitable pigments or inhibitors. These additives shall be compatible with the contents and remain effective throughout the life of the outer packaging. Where use is made of carbon black, pigments or inhibitors other than those used in the manufacture of the tested design type, re-testing may be waived if changes in the carbon black content, the pigment content or the inhibitor content do not adversely affect the physical properties of the material of construction.

6.6.4.3.3 Additives may be incorporated in the material of the large packaging to improve the resistance to ageing or to serve other purposes, provided that these do not adversely affect the physical or chemical properties of the material.

6.6.4.4 ***Specific requirements for fibreboard large packagings***

50G rigid fibreboard

6.6.4.4.1 Strong and good quality solid or double-faced corrugated fibreboard (single or multiwall) shall be used, appropriate to the capacity of the large packagings and to their intended use. The water resistance of the outer surface shall be such that the increase in mass, as determined in a test carried out over a period of 30 minutes by the Cobb method of determining water absorption, is not greater than 155 g/m^2 - see ISO535:1991. It shall have proper bending qualities. Fibreboard shall be cut, creased without scoring, and slotted so as to permit assembly without cracking, surface breaks or undue bending. The fluting or corrugated fibreboard shall be firmly glued to the facings.

6.6.4.4.2 The walls, including top and bottom, shall have a minimum puncture resistance of 15 J measured according to ISO 3036:1975.

6.6.4.4.3 Manufacturing joins in the outer packaging of large packagings shall be made with an appropriate overlap and shall be taped, glued, stitched with metal staples or fastened by other means at least equally effective. Where joins are effected by gluing or taping, a water resistant adhesive shall be used. Metal staples shall pass completely through all pieces to be fastened and be formed or protected so that any inner liner cannot be abraded or punctured by them.

6.6.4.4.4 Any integral pallet base forming part of a large packaging or any detachable pallet shall be suitable for mechanical handling with the large packaging filled to its maximum permissible gross mass.

6.6.4.4.5 The pallet or integral base shall be designed so as to avoid any protrusion of the base of the large packaging that might be liable to damage in handling.

6.6.4.4.6 The body shall be secured to any detachable pallet to ensure stability in handling and transport. Where a detachable pallet is used, its top surface shall be free from sharp protrusions that might damage the large packaging.

6.6.4.4.7 Strengthening devices such as timber supports to increase stacking performance may be used but shall be external to the liner.

6.6.4.4.8 Where large packagings are intended for stacking, the bearing surface shall be such as to distribute the load in a safe manner.

6.6.4.5 ***Specific requirements for wooden large packagings***

50C natural wood
50D plywood

6.6.4.5.1 The strength of the materials used and the method of construction shall be appropriate to the capacity and intended use of the large packagings.

6.6.4.5.2 Natural wood shall be well seasoned, commercially dry and free from defects that would materially lessen the strength of any part of the large packagings. Each part of the large packagings shall consist of one piece or be equivalent thereto. Parts are considered equivalent to one piece when a suitable method of glued assembly is used as for instance Lindermann joint, tongue and groove joint, ship lap or rabbet joint; or butt joint with at least two corrugated metal fasteners at each joint, or when other methods at least equally effective are used.

6.6.4.5.3 Large packagings of plywood shall be at least 3-ply. They shall be made of well seasoned rotary cut, sliced or sawn veneer, commercially dry and free from defects that would materially lessen the strength of the large packaging. All adjacent plies shall be glued with water resistant adhesive. Other suitable materials may be used with plywood for the construction of the large packaging.

6.6.4.5.4 Large packagings of reconstituted wood shall be made of water resistant reconstituted wood such as hardboard, particle board or other suitable type.

6.6.4.5.5 Large packagings shall be firmly nailed or secured to corner posts or ends or be assembled by equally suitable devices.

6.6.4.5.6 Any integral pallet base forming part of a large packaging or any detachable pallet shall be suitable for mechanical handling with the large packaging filled to its maximum permissible gross mass.

6.6.4.5.7 The pallet or integral base shall be designed so as to avoid any protrusion of the base of the large packaging that might be liable to damage in handling.

6.6.4.5.8 The body shall be secured to any detachable pallet to ensure stability in handling and transport. Where a detachable pallet is used, its top surface shall be free from sharp protrusions that might damage the large packaging.

6.6.4.5.9 Strengthening devices such as timber supports to increase stacking performance may be used but shall be external to the liner.

6.6.4.5.10 Where large packagings are intended for stacking, the bearing surface shall be such as to distribute the load in a safe manner.

6.6.5 Test requirements for large packagings

6.6.5.1 *Performance and frequency of test*

6.6.5.1.1 The design type of each large packaging shall be tested as provided in 6.6.5.3 in accordance with procedures established by the competent authority.

6.6.5.1.2 Tests shall be successfully performed on each large packaging design type before such a packaging is used. A large packaging design type is defined by the design, size, material and thickness, manner of construction and packing, but may include various surface treatments. It also includes large packagings which differ from the design type only in their lesser design height.

6.6.5.1.3 Tests shall be repeated on production samples at intervals established by the competent authority. For such tests on fibreboard large packagings, preparation at ambient conditions is considered equivalent to the provisions of 6.6.5.2.3.

6.6.5.1.4 Tests shall also be repeated after each modification which alters the design, material or manner of construction of large packagings.

6.6.5.1.5 The competent authority may permit the selective testing of large packagings that differ only in minor respects from a tested type, e.g. smaller sizes of inner packagings or inner packagings of lower net mass; and large packagings which are produced with small reductions in external dimension(s).

6.6.5.1.6 Where a large packaging has been successfully tested with different types of inner packagings, a variety of such different inner packagings may also be assembled in this large packaging. In addition, provided an equivalent level of performance is maintained, the following variations in inner packagings are allowed without further testing of the package:

(a) Inner packagings of equivalent or smaller size may be used provided:

(i) the inner packagings are of similar design to the tested inner packagings (e.g. shape - round, rectangular, etc);

(ii) the material of construction of the inner packagings (glass, plastics, metal etc.) offers resistance to impact and stacking forces equal to or greater than that of the originally tested inner packaging;

(iii) the inner packagings have the same or smaller openings and the closure is of similar design (e.g. screw cap, friction lid, etc);

(iv) sufficient additional cushioning material is used to take up void spaces and to prevent significant movement of the inner packagings; and

(v) inner packagings are oriented within the large packagings in the same manner as in the tested package;

(b) A lesser number of the tested inner packagings, or of the alternative types of inner packagings identified in (a) above, may be used provided sufficient cushioning is added to fill the void space(s) and to prevent significant movement of the inner packagings.

6.6.5.1.7 The competent authority may at any time require proof, by tests in accordance with this section, that serially-produced large packagings meet the requirements of the design type tests.

6.6.5.1.8 Provided the validity of the test results is not affected and with the approval of the competent authority, several tests may be made on one sample.

6.6.5.2 *Preparation for testing*

6.6.5.2.1 Tests shall be carried out on large packagings prepared as for transport including the inner packagings or articles used. Inner packagings shall be filled to not less than 98% of their maximum capacity for liquids or 95% for solids. For large packagings where the inner packagings are designed to carry liquids and solids, separate testing is required for both liquid and solid contents. The substances in the inner packagings or the articles to be transported in the large packagings may be replaced by other material or articles except where this would invalidate the results of the tests. When other inner packagings or articles are used they shall have the same physical characteristics (mass, etc) as the inner packagings or articles to be carried. It is permissible to use additives, such as bags of lead shot, to achieve the requisite total package mass, so long as they are placed so that the test results are not affected.

6.6.5.2.2 Large packagings made of plastics materials and large packagings containing inner packagings of plastic materials - other than bags intended to contain solids or articles - shall be drop tested when the temperature of the test sample and its contents has been reduced to -18°C or lower. This conditioning may be disregarded if the materials in question are of sufficient ductility and tensile strength at low temperatures. Where test sample are prepared in this way, the conditioning in 6.6.5.2.3 may be waived. Test liquids shall be kept in the liquid state by the addition of anti-freeze if necessary.

6.6.5.2.3 Large packagings of fibreboard shall be conditioned for at least 24 hours in an atmosphere having a controlled temperature and relative humidity (r.h). There are three options, one of which shall be chosen.

The preferred atmosphere is 23 ± 2°C and 50% ± 2% r.h. The two other options are: 20 ± 2°C and 65% ± 2% r.h.; or 27 ± 2°C and 65% ± 2% r.h.

Note: Average values shall fall within these limits. Short term fluctuations and measurement limitations may cause individual measurements to vary by up to ± 5% relative humidity without significant impairment of test reproducibility.

6.6.5.3 ***Test requirements***

6.6.5.3.1 ***Bottom lift test***

6.6.5.3.1.1 *Applicability*

For all types of large packagings which are fitted with means of lifting from the base, as a design type test.

6.6.5.3.1.2 *Preparation of large packagings for test*

The large packagings shall be loaded to [illegible] mass, the load being evenly distributed.

6.6.5.3.1.3 *Method of testing*

The large packagings shall be raised and lowered twice by a lift truck with the forks centrally positioned and spaced at three quarters of the dimension of the side of entry (unless the points of entry are fixed). The forks shall penetrate to three quarters of the direction of entry. The test shall be repeated from each possible direction of entry.

6.6.5.3.1.4 *Criteria for passing the test*

No permanent deformation which renders the large packagings unsafe for transport and no loss of contents.

6.6.5.3.2 *Top lift test*

6.6.5.3.2.1 *Applicability*

For types of large packagings which are intended to be lifted from the top and fitted with means of lifting, as a design type test.

6.6.5.3.2.2 *Preparation of large packagings for test*

The large packagings shall be loaded to twice its maximum permissible gross mass.

6.6.5.3.2.3 *Method of testing*

The large packagings shall be lifted in the manner for which it is designed until clear of the floor and maintained in that position for a period of five minutes.

6.6.5.3.2.4 *Criteria for passing the test*

No permanent deformation which renders the large packagings unsafe for transport and no loss of contents.

6.6.5.3.3 *Stacking test*

6.6.5.3.3.1 *Applicability*

For all types of large packagings which are designed to be stacked on each other, as a design type test.

6.6.5.3.3.2 *Preparation of large packagings for test*

[illegible] shall be filled to its maximum permissible [illegible]

6.6.5.3.3.3 *Method of testing*

The large packagings shall be placed on its base on level hard ground and subjected to a uniformly distributed superimposed test load (see 6.6.5.3.3.4) for a period of at least five minutes, large packagings of wood, fibreboard and plastic materials for a period of 24 h.

6.6.5.3.3.4 *Calculation of superimposed test load*

The load to be placed on the large packagings shall be 1.8 times the combined maximum permissible gross mass of the number of similar large packagings that must be stacked on top of the large packagings during transport.

6.6.5.3.3.5 *Criteria for passing the test*

No permanent deformation which renders the large packagings unsafe for transport and no loss of contents.

6.6.5.3.4 ***Drop test***

6.6.5.3.4.1 *Applicability*

For all types of large packagings as a design type test.

6.6.5.3.4.2 *Preparation of large packagings for testing*

The large packagings shall be filled in accordance with 6.6.5.2.1

6.6.5.3.4.3 *Method of testing*

The large packagings shall be dropped onto a rigid, non-resilient, smooth, flat and horizontal surface, in such a manner as to ensure that the point of impact is that part of the base of the large packagings considered to be the most vulnerable.

6.6.5.3.4.4 *Drop height*

Packing Group I	Packing Group II	Packing Group III
1.8m	1.2m	0.8m

***Note**: Packagings for substances and articles of Class 1, self-reactive substances of Division 4.1 and organic peroxides of Division 5.2 shall be tested at the Packing Group II performance level.*

6.6.5.3.4.5 *Criteria for passing the test*

6.6.5.3.4.5.1 The large packagings shall not exhibit any damage liable to affect safety during transport. There shall be no leakage of the filling substance from inner packaging(s) or article(s).

6.6.5.3.4.5.2 No rupture is permitted in large packagings for articles of Class 1 which would permit the spillage of loose explosive substances or articles from the large packagings.

6.6.5.3.4.5.3 Where a large packagings undergoes a drop test the sample passes the test if the entire contents are retained even if the closure is no longer sift-proof.

6.6.5.4 *Certification and test report*

6.6.5.4.1 In respect of each design type of large packagings a certificate and mark (as in 6.6.3) shall be issued attesting that the design type including its equipment meets the test requirements.

6.6.5.4.2 A test report containing at least the following particulars shall be drawn up and shall be available to the users of the large packagings:

1 Name and address of the test facility;
2 Name and address of applicant (where appropriate);
3 A unique test report identification;
4 Date of the test report;
5 Manufacturer of the large packagings;
6 Description of the large packagings design type (e.g. dimensions, materials, closures, thickness, etc) and/or photograph(s);
7 Maximum capacity/maximum permissible gross mass;
8 Characteristics of test contents, e.g. types and descriptions of inner packagings or articles used;
9 Test descriptions and results;
10 The test report shall be signed with the name and status of the signatory.

6.6.5.4.3 The test report shall contain statements that the large packagings prepared as for transport was tested in accordance with the appropriate provisions of this Chapter and that the use of other packaging methods or components may render it invalid. A copy of the test report shall be available to the competent authority."

Chapter 6.7 (existing Chapter 6.6 renumbered as Chapter 6.7)

6.7.2.11.2 Add the following new paragraph:

[illegible] may be produced in the pursuit [illegible]

6.7.2.12.2 Replace the third sentence by the following:

"These devices may be fusible, spring-loaded or frangible disc components, or a combination of spring-loaded and frangible disc devices."

6.7.2.20.3 Add the following new paragraph:

"6.7.2.20.3 If a portable tank is designed and approved for handling in open seas, the words "OFFSHORE PORTABLE TANK" shall be marked on the identification plate."

6.7.3.16.3 Add the following new paragraph:

"6.7.3.16.3 If a portable tank is designed and approved for handling in open seas, the words "OFFSHORE PORTABLE TANK" shall be marked on the identification plate."

6.7.4.15.3 Add the following new paragraph:

"6.7.4.15.3 If a portable tank is designed and approved for handling in open seas, the words "OFFSHORE PORTABLE TANK" shall be marked on the identification plate."

Chapter 7.1

7.1.1 Add the following three new paragraphs:

"7.1.1.3 Packages containing dangerous goods shall be secured by suitable means in the transport unit in a manner that will prevent any movement during the journey which would change the orientation of the packages or cause them to be damaged.

7.1.1.4 During loading and unloading, packagings containing dangerous goods shall be protected from being damaged. Particular attention shall be paid to the handling of packages during their preparation for transport, to the type of transport unit on which they are to be carried and to the method of loading or unloading, so that accidental damage is not caused through dragging or mishandling of the packages.

7.1.1.5 During transport, IBCs and large packagings shall be securely fixed or packed into the transport unit so as to prevent undesired lateral or longitudinal movement or impact and so as to provide adequate external support."

Add a new note to read as follows :

*"**Note**: Additional operational requirements for the transport of packagings and IBCs are provided in the special packing provisions for packagings and IBCs (see Chapter 4.1)."*

7.1.4.3.1.2 Amend to read as follows:

"7.1.4.3.1.2 *Derivation of control and emergency temperatures*

Type of receptacle	SADT 1/	Control temperature	Emergency temperature
Single packagings and IBCs	20 °C or less over 20 °C to 35 °C over 35 °C	20 °C below SADT 15 °C below SADT 10 °C below SADT	10 °C below SADT 10 °C below SADT 5 °C below SADT
Portable tanks	< 50 °C	10 °C below SADT	5 °C below SADT

1/ i.e. the SADT of the substance as packaged for transport.

Appendix A and Index

1. Amend as appropriate Appendix A and the alphabetical index in accordance with the amendments adopted for Chapter 3.2.

2. Delete the following entry in the alphabetical index:
"Engine starting fluid with flammable gas, see 2.1 1950"

Appendix B

GLOSSARY OF TERMS

Add the following new entries:

*"**AIR BAG INFLATORS, PYROTECHNIC or AIR BAG MODULES, PYROTECHNIC or SEAT-BELT PRETENSIONERS, PYROTECHNIC***

Articles which contain pyrotechnical substances and are used as life-saving vehicle airbags or seat-belts."

*"**STABILIZED***

Stabilized means that the substance is in a condition that precludes uncontrolled reaction. This

substance to remove dissolved oxygen and thereby to an extent in the packaging or intermediate the substance under temperature control."

PART 2

AMENDMENTS RELATED TO CLASS 7 (RADIOACTIVE MATERIAL)

Amend the Model Regulations in accordance with document ST/SG/AC.10/C.3/30/Add.3 with the following changes:

Table of contents

6.4.18 Replace "type B(U)", "type B(M)" and "type C" with "Type B(U)", "Type B(M)" and "Type C" respectively.

6.4.21 Replace "hexaflouride" with "hexafluoride".

Chapter 1.1

Paragraph

1.1.2.5 Add the following new section:

"1.1.2.5 ***Radioactive material possessing other dangerous properties***

1.1.2.5.1 In addition to the radioactive and fissile properties, any subsidiary risk of the contents of a package, such as explosiveness, flammability, pyrophoricity, chemical toxicity and corrosiveness, shall also be taken into account in the documentation, packing, labelling, marking, placarding, stowage, segregation and transport, in order to be in compliance with all relevant provisions for dangerous goods of these Model Regulations."

Chapter 2.0

2.0.3.2 Amend to read as follows:

"2.0.3.2 Apart from radioactive material in excepted packages (where the other hazardous properties take precedence) radioactive material having other hazardous properties shall always be classified in Class 7 and the subsidiary risk shall also be identified."

Chapter 2.7

2.7.8.2 Replace "7.2.3.1.3(a)" with "7.2.3.1.2(a)".

2.7.10 Amend to read as follows:

"2.7.10 Requirements for low dispersible material"

2.7.10.1 Delete the following first sentence:

"Requirements for low dispersible material"

2.7.10.2 Amend the first sentence to read as follows:

"Low dispersible material shall be tested as follows:"

2.7.10.3 Add a new paragraph as follows:

"2.7.10.3 Demonstration of compliance with the performance standards in 2.7.10.1 and 2.7.10.2 shall be in accordance with 6.4.12.1 and 6.4.12.2."

Chapter 3.2 DANGEROUS GOODS LIST

1. Add "T5" in column (10) and "TP4" in column (11) for UN 2913.

2. Add SP 172 in column (6) of Dangerous Goods List for the following UN entries:

2912, 2913, 2915, 2916, 2917, 2919, 3321, 3322, 3323, 3324, 3325, 3326, 3327, 3328, 3329, 3330, 3331, 3332, 3333.

3 Add SP 290 in column (6) of Dangerous Goods List for the following UN entries:

2908, 2909, 2910, 2911.

Chapter 3.3

3.3.1

SP 172 Replace "Delete" with "Amend to read as follows:

"172 Radioactive material with a subsidiary risk shall:

(a) be labelled with subsidiary risk labels corresponding to each subsidiary risk exhibited by the material; corresponding placards

shall be affixed to transport units in accordance with the relevant provisions of 5.3.1;

(b) be allocated to packing groups I, II or III, as and if appropriate, by application of the grouping criteria provided in Part 2 corresponding to the nature of the predominant subsidiary risk.

The description required in 5.4.1.1.7.1 (e) shall include a description of these subsidiary risks (e.g. "Subsidiary risk: 3, 6.1"), the name of the constituents which most predominantly contribute to this (these) subsidiary risk(s), and where applicable , the packing group."

SP 290 Add a new Special Provision 290 to read as follows:

"290 When this material meets the definitions and criteria of other classes or divisions as defined in Part 2, it shall be classified in accordance with the predominant subsidiary risk. Such material shall be declared under the proper shipping name and UN number appropriate for the material in that predominant Class or Division, with the addition of the name applicable to this material according to column (2) in the dangerous goods list, and shall be transported in accordance with the provisions applicable to that UN number. In addition, all other requirements specified in 2.7.9.1 shall apply, except 5.2.1.5.2 and 5.4.1.1.7.1 (c)."

Chapter 4.7

Paragraph

4.1.7.1.5 Replace by the following:

"4.1.7.1.5 Radioactive material with a subsidiary risk shall be transported in packagings, IBCs or tanks fully complying with the requirements of the relevant chapters of Part 6 as appropriate, as well as applicable requirements of chapters 4.1 or 4.2 for that subsidiary risk."

Chapter 5.2

5.2.2.1.11 Replace "...other than an excepted package..." with "...other than fissile material excepted under 6.4.11.2 ..."

Chapter 5.3

5.3.1.2.2 Replace "...RADIOACTIVE and/or when required ..." with "....RADIOACTIVE or [illegible] figure 7.2

On page 55, for "5.3.1.2.1.2, 5.3.2.1.3 and 5.3.2.2: Renumber..." read "5.3.2.1.2, 5.3.2.1.3 and 5.3.2.2 : Renumber...".

Chapter 6.4

6.4.12 Amend the title to read as follows:

"**6.4.12 Test procedures and demonstration of compliance**"

Chapter 7.1

7.1.6.4.2 Replace " 7.2.3.1.3" with "7.2.3.1.2" in the footnote a/ below the table.

Chapter 7.2

7.2.3.1.1 Add "(Model 7D)" after "Figure 5.2".

Annex 2

Correspondence between IAEA ST-1 paragraphs and UN paragraphs:

Delete "M" in column "UN" for 231 (ref ST-1).

Replace "P20 REC" with "P19 REC" in column "UN" for 304 (ref ST-1).

Reverse order of the 2 references in column "UN" for 507 (ref ST-1).

Replace "5.3.1.3.1" with "5.3.1.1.5.1" in column "UN" for 546 (ref ST-1).

Replace "5.3.1.3.2" with "5.3.2.1.1 and 5.3.2.1.2" in column "UN" for 547 (ref ST-1).

Add "5.3.1.1.5.2" in column "UN" for 570 (ref ST-1).

Replace "7.2.3.1.2" with "5.3.2.1.1 and 5.3.2.1.2" in column "UN" for 571 (ref ST-1).

Replace "7.2.3.1.3" with "7.2.3.1.2" in column "UN" for 572 (ref ST-1).

Replace "7.2.3.1.4" with "7.2.3.1.3" in column "UN"for 573 (ref ST-1).

Correspondence between IAEA ST-1 table and figure numbers and UN table and figure numbers:

Replace "Fig. 5.0" with "Fig. 5.1" in column "UN Figure" for 1 (ref ST-1 Figure).

Insert " 5.3.1.2.2" in column "UN Figure" for 6 (ref ST-1 Figure).

PART 3

AMENDMENTS TO THE MANUAL OF TESTS AND CRITERIA

Amend the Manual of Tests and Criteria in accordance with document ST/SG/AC.10/1998/14 */ with the following changes:

Section 38

Amend Section 38 as follows:

Paragraph

38.3.3.2 Add the following new definitions:

"*Aggregate lithium content* means the sum of the grams of lithium content contained by the cells comprising a battery."

"*Equivalent lithium content* is defined in the definition of lithium content."

"*Lithium content* means the mass of lithium in the anode of a lithium metal or lithium alloy cell, which for a primary cell is measured when the cell is in an undischarged state and for a rechargeable cell is measured when the cell is fully charged, except that in the case of a lithium-ion cell the lithium content is measured in terms of equivalent lithium content, which in grams is calculated to be 0.3 times the rated capacity in ampere-hours."

"*Lithium-ion* cell or battery means a rechargeable electrochemical cell or battery in which the positive and negative electrodes are both intercalation compounds (intercalated lithium exists in an ionic or quasi-atomic form with the lattice of the electrode material) constructed with no metallic lithium in either electrode."

38.3.4.4.3 Replace "[, or until a maximum force of 10 kN is applied]" with ", or until a maximum force of 1000 times the weight of the cell, but not less thant 10 kN, is applied" in first sentence.

Replace "[, or when the maximum 10 kN force is achieved whichever occurs first]" with ", or when a force equal to the maximum of 10 kN or of 1000 times the weight is achieved, whichever occurs first" in the last sentence.

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*/ ***Note by the secretariat*** *: For the Arabic, Chinese, Russian and Spanish versions, refer to documents ST/SG/AC.10/C.3/26/Add.2, annex 2, ST/SG/AC.10/C.3/28/Add.1, annex 2 and ST/SG/AC.10/C.3/30/Add.1.*